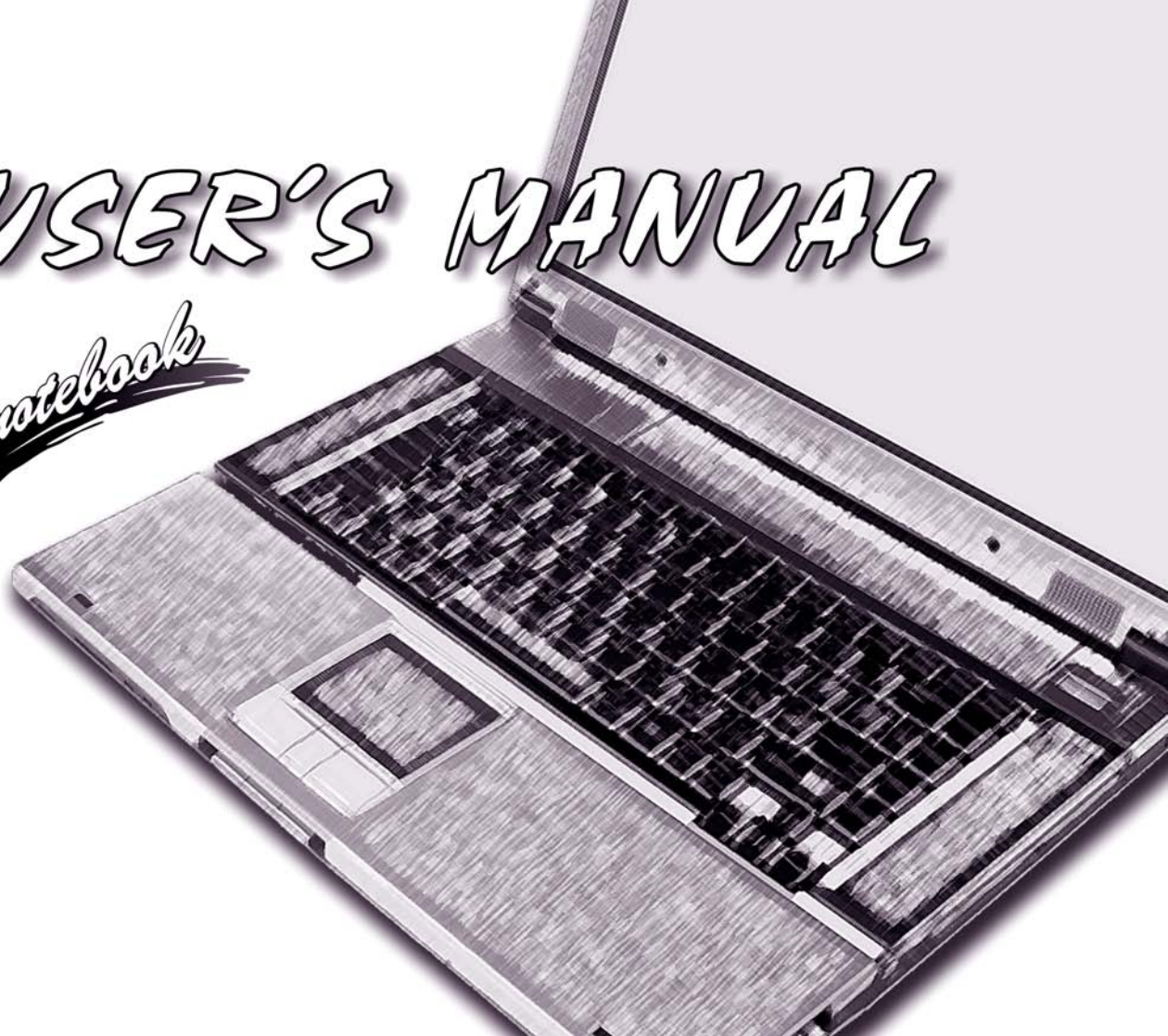
USER'S MANUAL

notebook



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(Federal Communications Commission)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re orient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the service representative or an experienced radio/TV technician for help.

Warning

Use only shielded cables to connect I/O devices to this equipment. You are cautioned that changes or modifications not expressly approved by the manufacturer for compliance with the above standards could void your authority to operate the equipment.

IMPORTANT SAFETY INSTRUCTIONS

Follow basic safety precautions, including those listed below, to reduce the risk of fire, electric shock, and injury to persons when using any electrical equipment:

1. Do not use this product near water, for example near a bath tub, wash bowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool.
2. Avoid using this equipment with a telephone line (other than a cordless type) during an electrical storm. There may be a remote risk of electrical shock from lightning.
3. Do not use the telephone to report a gas leak in the vicinity of the leak.
4. Use only the power cord and batteries indicated in this manual. Do not dispose of batteries in a fire. They may explode. Check with local codes for possible special disposal instructions.
5. This product is intended to be supplied by a Listed Power Unit (DC Output 20V, 4.5A minimum).

CAUTION

Always disconnect all telephone lines from the wall outlet before servicing or disassembling this equipment.

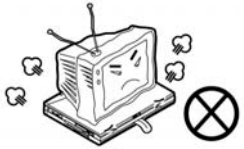
TO REDUCE THE RISK OF FIRE, USE ONLY NO. 26 AWG OR LARGER, TELECOMMUNICATION LINE CORD

This Computer's Optical Device is a Class I Laser Product

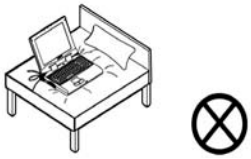
Instructions for Care and Operation

The notebook computer is quite rugged, but it can be damaged. To prevent this, follow these suggestions:

1. **Don't drop it, or expose it to shock.** If the computer falls, the case and the components could be damaged.

Do not expose the computer to any shock or vibration.	*Do not place it on an unstable surface.*	*Do not place anything heavy on the computer.*
		

2. **Keep it dry, and don't overheat it.** Keep the computer and power supply away from any kind of heating element. This is an electrical appliance. If water or any other liquid gets into it, the computer could be badly damaged.

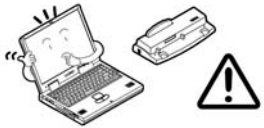
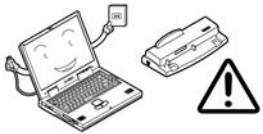
Do not expose it to excessive heat or direct sunlight.	*Do not leave it in a place where foreign matter or moisture may affect the system.*	*Don't use or store the computer in a humid environment.*	*Do not place the computer on any surface that will block the vents.*
			

3. **Avoid interference.** Keep the computer away from high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage your data.

4. **Follow the proper working procedures for the computer**. Shut the computer down properly and don't forget to save your work. Remember to periodically save your data as data may be lost if the battery is depleted.

Do not turn off the power until you properly shut down all programs.	*Do not turn off any peripheral devices when the computer is on.*	*Do not disassemble the computer by yourself.*	*Perform routine maintenance on your computer.*
			

5. **Take care when using peripheral devices**.

Use only approved brands of peripherals.	*Unplug the power cord before attaching peripheral devices.*
	

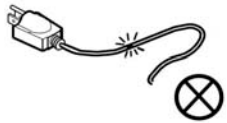
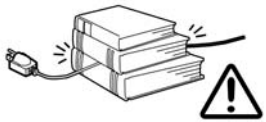
Power Safety

The computer has specific power requirements:

Power Safety Warning

Before you undertake any upgrade procedures, make sure that you have turned off the power, and disconnected all peripherals and cables (including telephone lines). It is advisable to also remove your battery in order to prevent accidentally turning the machine on.

- Only use a power adapter approved for use with this computer.
- Your AC adapter may be designed for international travel but it still requires a steady, uninterrupted power supply. If you are unsure of your local power specifications, consult your service representative or local power company.
- The power adapter may have either a 2-prong or a 3-prong grounded plug. The third prong is an important safety feature; do not defeat its purpose. If you do not have access to a compatible outlet, have a qualified electrician install one.
- When you want to unplug the power cord, be sure to disconnect it by the plug head, not by its wire.
- Make sure the socket and any extension cord(s) you use can support the total current load of all the connected devices.
- Before cleaning the computer, make sure it is disconnected from any external power supplies (i.e. AC adapter or car adapter).

Do not plug in the power cord if you are wet.	*Do not use the power cord if it is broken.*	*Do not place heavy objects on the power cord.*
		

Battery Precautions

- Only use batteries designed for this computer. The wrong battery type may explode, leak or damage the computer.
- Recharge the batteries using the notebook's system. Incorrect recharging may make the battery explode.
- Do not try to repair a battery pack. Refer any battery pack repair or replacement to your service representative or qualified service personnel.
- Keep children away from, and promptly dispose of a damaged battery. Always dispose of batteries carefully. Batteries may explode or leak if exposed to fire, or improperly handled or discarded.
- Keep the battery away from metal appliances.
- Affix tape to the battery contacts before disposing of the battery.
- Do not touch the battery contacts with your hands or metal objects.

Battery Disposal

The product that you have purchased contains a rechargeable battery. The battery is recyclable. At the end of its useful life, under various state and local laws, it may be illegal to dispose of this battery into the municipal waste stream. Check with your local solid waste officials for details in your area for recycling options or proper disposal.

Caution

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used battery according to the manufacturer's instructions.

Cleaning

Do not apply cleaner directly to the computer; use a soft clean cloth.
Do not use volatile (petroleum distillates) or abrasive cleaners on any part of the computer.

Servicing

Do not attempt to service the computer yourself. Doing so may violate your warranty and expose you and the computer to electric shock. Refer all servicing to authorized service personnel. Unplug the computer from the power supply. Then refer servicing to qualified service personnel under any of the following conditions:

- When the power cord or AC/DC adapter is damaged or frayed.
- If the computer has been exposed to rain or other liquids.
- If the computer does not work normally when you follow the operating instructions.
- If the computer has been dropped or damaged (do not touch the poisonous liquid if the LCD panel breaks).
- If there is an unusual odor, heat or smoke coming from your computer.

Removal Warning

When removing any cover(s) and screw(s) for the purposes of device upgrade, remember to replace the cover(s) and screw(s) before turning the computer on.

Travel Considerations

Packing

As you get ready for your trip, run through this list to make sure the system is ready to go:

1. Check that the battery pack and any spares are fully charged.
2. Power off the computer and peripherals.
3. Close the display panel and make sure it's latched.
4. Disconnect the AC adapter and cables. Stow them in the carrying bag.
5. The AC adapter uses voltages from 100 to 240 volts so you won't need a second voltage adapter. However, check with your travel agent to see if you need any socket adapters.
6. Put the notebook in its carrying bag and secure it with the bag's straps.
7. If you're taking any peripherals (e.g. a printer, mouse or digital camera), pack them and those devices' adapters and/or cables.
8. Anticipate customs - Some jurisdictions may have import restrictions or require proof of ownership for both hardware and software. Make sure your "papers" are handy.

Power Off Before Traveling

Make sure that your notebook is completely powered off before putting it into a travel bag (or any such container). Putting a notebook which is powered on in a travel bag may cause the vents/intakes to be blocked. To prevent your computer from overheating make sure nothing blocks the vent/fan intake while the computer is in use.

On the Road

In addition to the general safety and maintenance suggestions in this preface, and Chapter 8: Troubleshooting, keep these points in mind:

Hand-carry the notebook - For security, don't let it out of your sight. In some areas, computer theft is very common. Don't check it with "normal" luggage. Baggage handlers may not be sufficiently careful. Avoid knocking the computer against hard objects.

Beware of Electromagnetic fields - Devices such as metal detectors & X-ray machines can damage the computer, hard disk, floppy disks, and other media. They may also destroy any stored data - Pass your computer and disks around the devices. Ask security officials to hand-inspect them (you may be asked to turn it on). **Note**: Some airports also scan luggage with these devices.

Fly safely - Most airlines have regulations about the use of computers and other electronic devices in flight. These restrictions are for your safety, follow them. If you stow the notebook in an overhead compartment, make sure it's secure. Contents may shift and/or fall out when the compartment is opened.

Get power where you can - If an electrical outlet is available, use the AC adapter and keep your battery(ies) charged.

Keep it dry - If you move quickly from a cold to a warm location, water vapor can condense inside the computer. Wait a few minutes before turning it on so that any moisture can evaporate.

Developing Good Work Habits

Developing good work habits is important if you need to work in front of the computer for long periods of time. Improper work habits can result in discomfort or serious injury from repetitive strain to your hands, wrists or other joints. The following are some tips to reduce the strain:

- Adjust the height of the chair and/or desk so that the keyboard is at or slightly below the level of your elbow. Keep your forearms, wrists, and hands in a relaxed position.
- Your knees should be slightly higher than your hips. Place your feet flat on the floor or on a footrest if necessary.
- Use a chair with a back and adjust it to support your lower back comfortably.
- Sit straight so that your knees, hips and elbows form approximately 90-degree angles when you are working.
- Take periodic breaks if you are using the computer for long periods of time.

Remember to:

- Alter your posture frequently.
- Stretch and exercise your body several times a day.
- Take periodic breaks when you work at the computer for long periods of time. Frequent and short breaks are better than fewer and longer breaks.

Lighting

Proper lighting and comfortable display viewing angle can reduce eye strain and muscle fatigue in your neck and shoulders.

- Position the display to avoid glare or reflections from overhead lighting or outside sources of light.
- Keep the display screen clean and set the brightness and contrast to levels that allow you to see the screen clearly.
- Position the display directly in front of you at a comfortable viewing distance.
- Adjust the display-viewing angle to find the best position.

Contents

Introduction

Using The Computer

Advanced Controls

Drivers & Utilities

BIOS Utilities

Upgrading The Computer

Wireless & PC Camera Modules

Troubleshooting

Specifications

Chapter 1: Introduction

Overview

This manual refers to the hardware and essential software required to run your computer. Depending on how your system is configured, some or all of the features described may already be set up. This chapter covers:

- The Manual — how to use it
- System Map — navigating around your computer

Advanced Users

If you are an advanced user you may skip over most of this manual. However you may find it useful to refer to ***"What to Install" on page 4 - 1***, ***"BIOS Utilities" on page 5 - 1*** and ***"Upgrading The Computer" on page 6 - 1***. You may also find the notes marked with a  of interest to you.

Beginners and Not-So-Advanced Users

If you are new to computers (or do not have an advanced knowledge of them) then you should try to look through all the documentation. Do not worry if you do not understand everything the first time. Keep this manual nearby and refer to it to learn as you go. You may find it useful to refer to the notes marked with a  as indicated in the margin.

Notes

Check the light colored boxes with the mark above to find detailed information about the computer's features.

Warning Boxes

No matter what your level please pay careful attention to the warning and safety information indicated by the symbol. Also please note the safety and handling instructions as indicated in the *Preface*.

Not Included

Operating Systems (e.g. *Windows XP etc.*) have their own manuals, as do applications (e.g. word processing, spreadsheet and database programs). If you have questions about the operating systems or programs then please consult the appropriate manuals.

System Software

Your computer may already come with system software pre-installed. Where this is not the case, or where you are re-configuring your computer for a different system, you will find this manual refers to the following operating systems:

- *Microsoft Windows XP (Home & Professional Editions)*

Quick Start Guide

This guide assumes that you are already familiar with computers and can tell at a glance what and where all the key components are. If you are not that comfortable with this type of device, then please refer to the following pages, which give an overview of the system.

It is still best to review these steps, *before* taking any action. If there is anything you are not sure about, then please refer to the appropriate chapter before continuing.

Unless you need to install an operating system, your computer should be ready to work right out of the box. Before you begin please follow the safety instructions in the *Preface*.

1. Remove all packing materials.
2. Securely attach any peripherals you want to use with the computer (e.g. keyboard and mouse) to their ports.
3. Attach the AC adapter to the DC-in jack on the right of the computer (see ***"Right Side View" on page 1 - 16***), then plug the AC power cord into an outlet, and connect the AC power cord to the AC adapter.
4. Raise the lid/LCD to a comfortable viewing angle.
5. Press the power button to turn "On".

Peripheral Devices

Please note that peripherals (printers, digital cameras, etc.) which attach to your computer by either **USB** or **IEEE1394** ports may be connected after ***Windows*** is up and running. All other peripherals must be connected *before* you turn on the system.

System Map

Your computer has a lot of built-in features. Most of these are enabled by your operating system. Further explanations of the various subsystems are covered in the chapter or pages indicated.

Getting to Know Your Computer

The following graphics will help you to become familiar with the basic functions, and to learn the location of the various ports and components of your computer.

Top View

Figure 1 - 1
Top View
(LCD Panel Closed)

1. LCD Latches
2. LED Power & Communication Indicators

To open the LCD display:

1. Place the computer on a stable surface.
2. Move the LCD latches 1 in the direction of the arrows to release the top cover (the left latch will lock in position and is clearly marked with locked and unlocked icons).
3. Lift the top cover to reveal the LCD panel and keyboard.
4. Adjust the LCD panel to a comfortable viewing angle.
5. The LED indicators 2 show the power and battery status of the computer, and give notification of e-mail received.

Top View with LCD Panel Open

Figure 1 - 2
Top View
(LCD Panel Open)

1. Optional Built-In PC Camera
2. LCD
3. LED Power & Communication Indicators
4. Speakers
5. Lid Sensor
6. LED Status Indicators
7. Power Button
8. Keyboard
9. Built-In Microphone
10. TouchPad and Buttons
11. Ap-Key Buttons

PC Camera

If you have purchased the **optional** PC Camera, make sure you install the driver/software application (see *"PC Camera" on page 7 - 7*). **Use the Fn + F8 key combination to toggle power to the PC Camera** (see *"Function Keys and Numeric Keypad" on page 2 - 14*).

LCD Panel

The computer comes with a wide screen TFT (Thin Film Transistor), Liquid Crystal Display screen (see *"LCD" on page A - 2* for details).

LED Power & Communication Indicators

These indicators display the system power status, and battery status of the computer. The third indicator may be configured to give a visual confirmation when e-mail is received in the default e-mail program (see *"LED Power & Communication Indicators" on page 2 - 3*).

Stereo Speakers

The built-in speakers provide rich, stereo sound.

SRS Surround Sound

The SRS WOW Surround Sound may be toggled ON/OFF using the **Fn + F7** key combination.

Lid Sensor

This LCD lid sensor is activated when the LCD panel is closed. When activated, the default setting of your operating system's power scheme sends the computer into a power saving state (see *Figure 3 - 13 on page 3 - 20*).

LED Status Indicators

These display the system's operational status. Refer to *"LED Status Indicators" on page 2 - 2* for more information on what the lights mean.

Power Button

Press this button to turn your computer on or off. This button may also be used as a suspend/resume key, once configured as such in the power management control panel of your operating system (see *"Configuring the Power Button" on page 3 - 20*).

Forced Off

If the system "hangs", and the **Ctrl** + **Alt** + **Del** key combination doesn't work, press the power button for **4 seconds,** or longer**,** to force the system to turn itself off.

Shutdown

Please note that you should always shut your computer down by choosing the **Shut Down/Turn Off Computer** command from the **Start** menu in ***Windows*****.** This will help prevent hard disk or system problems.

Keyboard

The computer has a “Win Key” keyboard including a numeric keypad. It has the same features as a full-sized desktop keyboard and can easily be replaced with a different language keyboard should you desire.

Microphone

Record on your computer with the built-in microphone.

TouchPad & Buttons

The pointing device features a sensitive glide pad for precise movements. It functions the same way as a two-button mouse. The right TouchPad button is the same as the right mouse button; the left TouchPad button is the same as the left mouse button. The central button may be used to scroll up and down, or may be configured to perform a variety of functions (see ***“TouchPad and Buttons/Mouse” on page 2 - 16***).

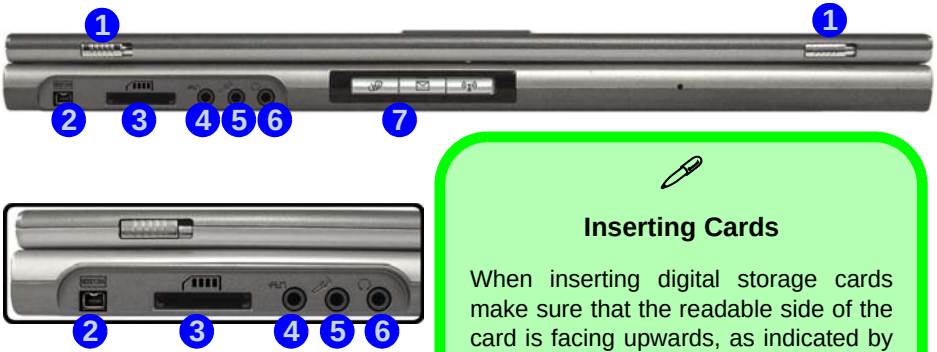
Ap-Key Buttons

The three Ap-Key buttons allow you instant access to your default Internet browser and default e-mail program, and to toggle the power on/off to the **optional** Wireless LAN/Bluetooth modules. To learn how to set the buttons, see ***“Ap-Key Buttons” on page 2 - 13***.

Front View

Figure 1 - 3
Front View

1. LCD Latches
2. Mini-IEEE 1394 port
3. 4-in-1 Card Reader
4. S/PDIF Out Jack
5. Microphone-In Jack
6. Headphone-Out Jack
7. Ap-Key Buttons



Inserting Cards

When inserting digital storage cards make sure that the readable side of the card is facing upwards, as indicated by the icon on the card reader.

Mini-IEEE 1394 Port

This allows high-speed connection to various peripheral devices, e.g. external disk drives and digital cameras (see note below).

IEEE 1394

The Mini-IEEE 1394 port only supports **SELF POWERED** IEEE 1394 devices.

4-in-1 Card Reader

The card reader allows you to use some of the latest digital storage cards (SD/MS/MS PRO/MMC). Push the card into the slot and it will appear as a removable device (refer to *"4-in-1 Card Reader" on page 2 - 12*).

Card Reader Cover

Make sure you keep the cover in the card reader when not is use. This will help prevent foreign objects and/or dust getting in to the card reader.

S/PDIF Out Jack

This S/PDIF (Sony/Philips Digital Interface Format) Out Jack allows you to connect your DVD-capable PC to a Dolby AC-3 compatible receiver for "5.1" or 'dts' surround sound.

Microphone-In Jack

Record on your computer with an external microphone.

Headphone-Out Jack

Headphones or speakers may be connected through this jack. **Note**: Set your system's volume to a reduced level before connecting to this jack.

Ap-Key Buttons

The three Ap-Key buttons allow you instant access to your default Internet browser and default e-mail program, and to toggle the power on/off to the **optional** Wireless LAN/Bluetooth modules (see below). To learn how to set the buttons, see *"Ap-Key Buttons" on page 2 - 13*.

Wireless Module Power Ap-Key Button

You can use this button to toggle the power ON/OFF for the **optional** Intel PRO/Wireless **2200BG (802.11b/g) OR 2195ABG (802.11a/b/g)** Mini-PCI WLAN Module, and the **optional Bluetooth** module. To enable the module(s) you will need to install the drivers/software for them (see *"Intel PRO/Wireless Mini PCI WLAN Module" on page 7 - 3* & *"Bluetooth Module" on page 7 - 5*). **Make sure the wireless modules are OFF when you are using the computer aboard aircraft (see below).**

Wireless Device Power Status

If you **restart/turn off** the computer, the power status of the module(s) will remain **the same** as it was before the restart/shut down.

Wireless Device Operation Aboard Aircraft

The use of any portable electronic transmission devices aboard aircraft is usually prohibited. Make sure the module(s) are **OFF** if you are using the computer aboard aircraft. Check the taskbar icons, and the WLAN LED status indicator for the power status of the WLAN/Bluetooth module(s).

Left Side View

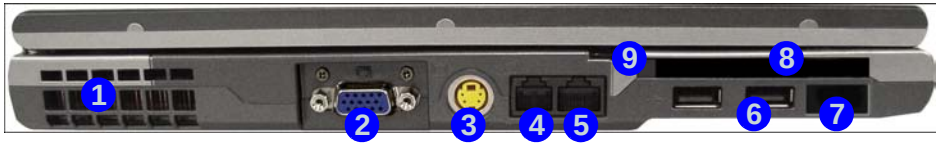


Figure 1 - 4
Left Side View

1. Vent
2. External Monitor Port
3. S-Video-Out Port
4. RJ-11 Phone Jack
5. RJ-45 LAN Jack
6. 2 * USB 2.0 Ports
7. Infrared Transceiver
8. PC Card Slot
9. PC Card Eject Button

Vent/Fan Intake

This enables airflow to prevent the computer from overheating.

Overheating

To prevent your computer from overheating make sure nothing blocks the vent/fan intake while the computer is in use.

External Monitor Port

Connect an external monitor to this port to allow dual video or simultaneous display on the notebook's LCD and external monitor (see ***"Display Devices & Display Modes" on page 3 - 8***).

S-Video-Out Port

Connect your television to your computer and view DVDs, VCDs or anything else your computer can display. You will need an S-Video cable to make the connection. Enable this port from the video driver controls.

RJ-11 Phone Jack

This port connects to the built-in modem. You may plug the telephone line directly into this RJ-11 telephone connection.
Note: Broadband (e.g. ADSL) modems usually connect to the LAN port.

RJ-45 LAN Jack

This port supports LAN (Network) functions.
Note: Broadband (e.g. ADSL) modems usually connect to the LAN port.

2 * USB 2.0/1.1 Ports

These **USB 2.0** compatible ports (USB 2.0 is fully USB 1.1 compliant) are for low-speed peripherals such as keyboards, mice or scanners, and for high-speed peripherals such as external HDDs, digital video cameras or high-speed scanners etc. Devices can be plugged into the computer, and unplugged from the computer, without the need to turn the system off (if the power rating of your USB device is 500mA or above, make sure you use the power supply which comes with the device).

USB 2.0 Support in Windows XP

Make sure you install **Windows XP Service Pack 2** (or are installing a Windows XP version which includes Service Pack 2) **before installing any drivers.** Service Pack 2 includes support for **USB 2.0**.

PC Card Slot

The 3.3V/5V slot may be used for a Type-II PC Card (PC Cards were also previously referred to as PCMCIA) and fully supports Cardbus. Refer to ***"PC Card Slot" on page 2 - 11*** for more information.

Figure 1 - 5
Right Side View

1. USB 2.0/1.1 Port
2. Serial Port
3. Optical CD/DVD Device Bay
4. DC-In Jack

Right Side View

USB 2.0/1.1 Port

These **USB 2.0** compatible ports (USB 2.0 is fully USB 1.1 compliant) are for low-speed peripherals such as keyboards, mice or scanners, and for high-speed peripherals such as external HDDs, digital video cameras or high-speed scanners etc. Devices can be plugged into the computer, and unplugged from the computer, without the need to turn the system off (if the power rating of your USB device is 500mA or above, make sure you use the power supply which comes with the device).

Serial Port

Connect a serial type mouse to this port.

Optical (CD/DVD) Device Bay

The optical device bay will contain a 5.25" (12.7mm height) CD/DVD type device. The actual device will depend on your purchase option (see *"Optional" on page A - 5* for options). For more information on using the drive please refer to *"The Optical (CD/DVD) Device" on page 2 - 7*.

CD Emergency Eject

If you need to manually eject a CD/DVD (e.g. due to an unexpected power interruption) you may push the end of a straightened paper clip into the emergency eject hole. Do not use a sharpened pencil or similar object that may break and become lodged in the hole.

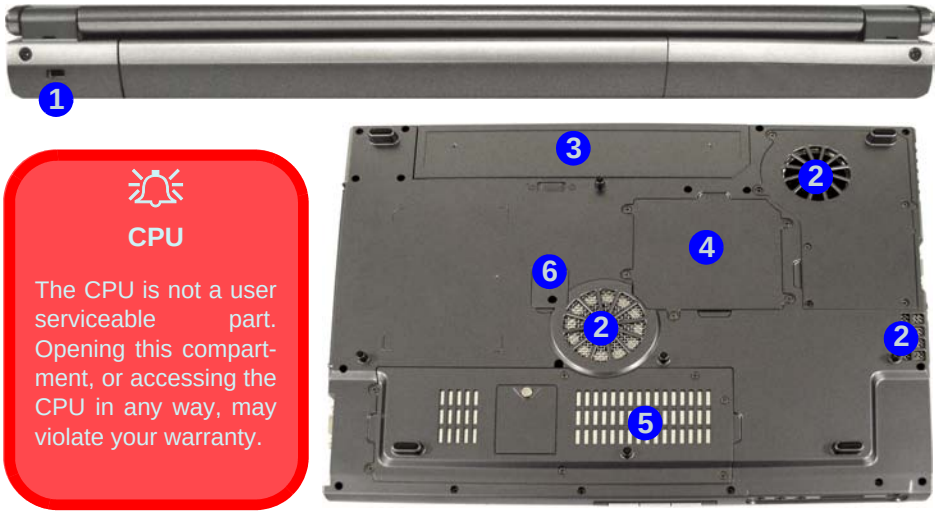
DC-In Jack

Plug the supplied AC adapter into this jack to power your computer.

Rear View & Bottom Views

Figure 1 - 6
Rear View & Bottom Views

1. Security Lock Slot
2. Vent/Fan Intake
3. Battery
4. RAM Bay Cover
5. Hard Disk, WLAN & Bluetooth Module Bay Cover
6. Optical (CD/DVD) Device Screw Cover



CPU

The CPU is not a user serviceable part. Opening this compartment, or accessing the CPU in any way, may violate your warranty.

Security Lock Slot

To prevent possible theft, a Kensington-type lock can be attached to this slot. Locks can be purchased at any computer store.

Vent/Fan Intake

This enables airflow to prevent the computer from overheating.

Overheating

To prevent your computer from overheating make sure nothing blocks the vent/fan intake while the computer is in use.

Battery

See *"Battery Information" on page 3 - 21* for instructions on battery use and care.

Hard Disk Drive

The internal hard disk drive is used to store your data. See page *6 - 4* for information on upgrading/replacing your hard disk drive.

Drive Warning

Don't try to remove the hard disk (HDD) while the system is on. This could cause data loss or damage. Unauthorized removal or tampering with the HDD may violate your warranty. If you are in doubt, consult your service representative.

Wireless LAN & Bluetooth Modules

The optional Wireless LAN and Bluetooth modules may be powered ON/OFF by pressing the button at the front of the computer (see *"Wireless Module Power Ap-Key Button" on page 1 - 12* & *"WLAN/ Bluetooth Toggle Power Order" on page 7 - 2*).

Wireless LAN (Network) & Bluetooth Modules

The antenna(e) and other components of the Intel PRO/Wireless **2200BG (802.11b/g) OR 2195ABG (802.11a/b/g)** Mini PCI WLAN Module, and the **optional Bluetooth** module are not externally visible (please check with your service representative). If your configuration includes the module(s), make sure you install the driver for it (see *7 - 3* & *7 - 5* for more information).

Chapter 2: Using The Computer

Overview

To learn more about using your computer, please read this chapter.

This chapter includes:

- LED Indicators
- Auto Mail Checker
- Hard Disk Drive
- The Optical (CD/DVD) Device
- PC Card Slot
- 4-in-1 Card Reader
- Ap-Key Buttons
- Function Keys and Numeric Keypad
- TouchPad and Buttons/Mouse
- Audio Features
- Adding a Printer

LED Indicators

There are two sets of LED indicators (**LED Status Indicators** and **LED Power & Communication Indicators** and) on your computer that will display helpful information about the current status of the computer. The **LED Power & Communication Indicators** are also visible when the top of your computer is closed.

LED Status Indicators

Table 2 - 1
LED Status Indicators

Icon	Color	Description
	Green	Number Lock is activated
	Green	Caps Lock is activated
	Green	Scroll Lock is activated (to activate/deactivate press **Fn** & **Scr Lk**)
	Green	Hard Disk/CD Device activity
	Green	The WLAN Module is ON

LED Power & Communication Indicators

Icon	Color	Description
	Orange	DC power is plugged in
	Green	The computer is on
	Blinking Green	The computer is in standby mode
	Orange	The battery is being charged
	Green	The battery is fully charged
	Blinking Orange	The battery has reached critically low power status
	Blinking Green	New mail has arrived

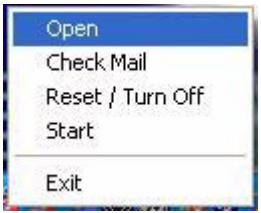
Table 2 - 2
LED Power & Communication Indicators

Auto Mail Checker

After you have installed the driver for the Auto Mail Checker program (see *"AutoMail Checker (WinXP)" on page 4 - 10*) you may then configure it to give you notification when you receive new mail. You must be online to receive this notification (note that this program only supports the **POP3** protocol), and your default mail program does not need to be open.

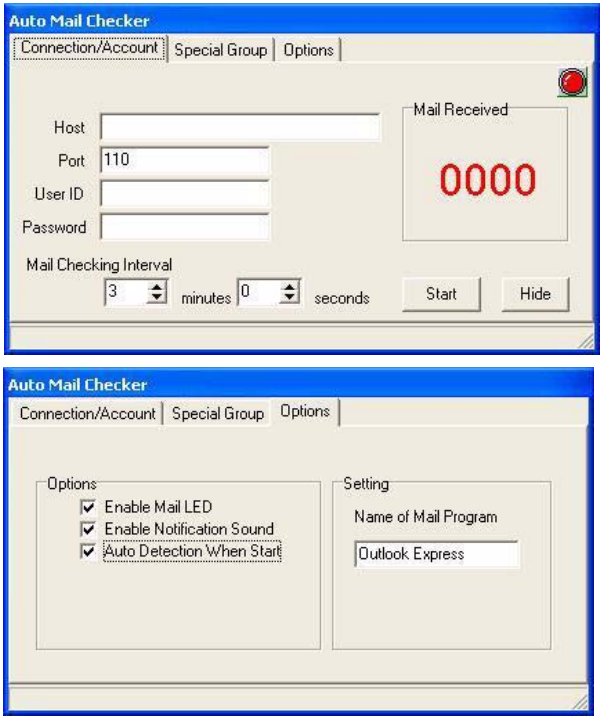
The Auto Mail Checker appears as an icon in the **taskbar** (if you do not see the icon in the taskbar go to **Start > Programs/All Programs > Auto Mail Checker > Auto Mail Checker)**. Right clicking on the icon will bring up the following options menu. If you have not input your mail account data, then you will be prompted to do so.

Figure 2 - 1
Auto Mail Checker



Select **Open** to bring up the control panel for the program.

You may then configure the options for your mailserver, name, password, program and method(s) of notification.



Note

Check with your Internet Service Provider, network administrator or Mail Service provider for details on what to put on these pages.

Figure 2 - 2
Auto Mail Checker Account Setup and Options

Power Safety

Before attempting to access any of the internal components of your computer please ensure that the machine is not connected to the AC power, and that the machine is turned off. Also ensure that all peripheral cables, including phone lines, are disconnected from the computer.

Hard Disk Drive

The hard disk drive is used to store your data in the computer. The hard disk can be taken out to accommodate other 2.5" IDE hard disk drives with a height of 9.5 mm.

The hard disk 1 is accessible from the bottom of your computer as seen below. Further details on removing and inserting the hard disk are available in *"Upgrading the Hard Disk Drive" on page 6 - 4*.

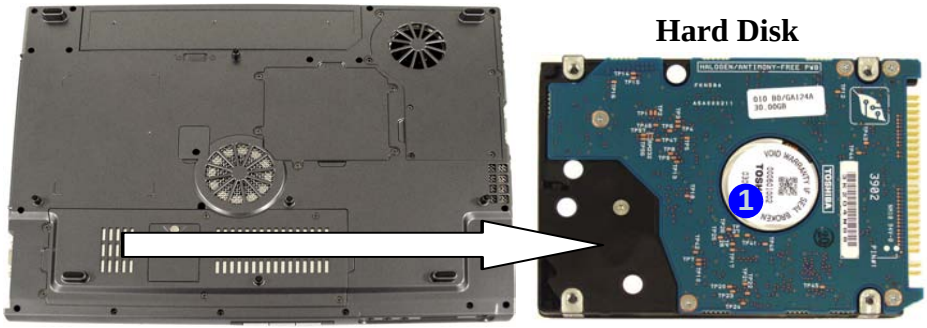


Figure 2 - 3
Hard Disk Location

The Optical (CD/DVD) Device

There is a bay for a 5.25" CD/DVD device (12.7mm height). The actual device will depend on the model you purchased (see *"Optional" on page A - 5*). The CD Device is usually labeled "**Drive D:**" and may be used as a boot device if properly set in the **BIOS** (see *"Boot Menu" on page 5 - 12*).

Loading Discs

To insert a CD/DVD, press the open button 1 and carefully place a CD/DVD onto the disc tray with label-side facing up (use just enough force for the disc to click onto the tray's spindle). Gently push the CD/DVD tray in until its lock "clicks" and you are ready to start. The busy indicator 2 will light up while data is being accessed, or while an audio/video CD, or DVD, is playing. If power is unexpectedly interrupted, insert an object such as a straightened paper clip into the emergency eject hole 3 to open the tray.

Sound Volume Adjustment

How high the sound volume can be set depends on the setting of the volume control within ***Windows***. Click the **Speaker** icon on the taskbar to check the setting.

All peripherals must be connected before you turn on the system.

Figure 2 - 4
Optical CD/DVD Device

CD Emergency Eject

If you need to manually eject a CD (e.g. due to an unexpected power interruption) you may push the end of a straightened paper clip into the emergency eject hole. However please do NOT use a sharpened pencil or similar object that may break and become lodged in the hole.

Handling CDs or DVDs

Proper handling of your CDs/DVDs will prevent them from being damaged. Please follow the advice below to make sure that the data stored on your CDs/DVDs can be accessed.

Remember to:

- Hold the CD or DVD by the edges; do not touch the surface of the disc.
- Use a clean, soft, dry cloth to remove dust or fingerprints.
- Do not write on the surface with a pen.
- Do not attach paper or other materials to the surface of the disc.
- Do not store or place the CD or DVD in high-temperature areas.
- Do not use benzene, thinner, or other cleaners to clean the CD or DVD.
- Do not bend the CD or DVD.
- Do not drop or subject the CD or DVD to shock.

DVD Regional Codes

DVD region detection is device dependent, not OS-dependent. You can select your module's region code **5** times. The fifth selection is permanent. This cannot be altered even if you change your operating system or you use the module in another computer.

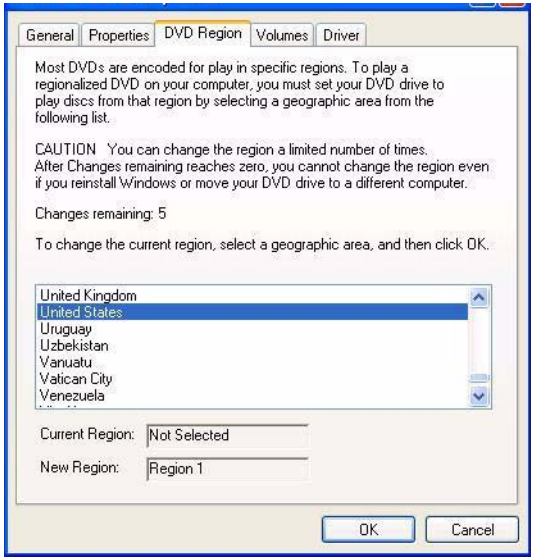


Figure 2 - 5
DVD Regional Codes (Windows XP)

Changing DVD Regional Codes

Go to the **Control Panel** in *WindowsXP* and double-click **System** > **Hardware** (tab), click **Device Manager**, then click the + next to **DVD/CD-ROM drives**. Double-click on the DVD-ROM device to bring up the **Properties** menu, and select the **DVD Region** (tab) to bring up the control panel as seen in ***"DVD Regional Codes (Windows XP)" on page 2 - 9***.

Table 2 - 3
DVD Regional Coding

DVD Regional Coding	
Region	**Geographical Location**
1	USA, Canada
2	Western Europe, Japan, South Africa, Middle East & Egypt
3	South-East Asia, Taiwan, South Korea, The Philippines, Indonesia, Hong Kong
4	South & Central America, Mexico, Australia, New Zealand
5	N Korea, Russia, Eastern Europe, India & Most of Africa
6	China

PC Card Slot

The computer is equipped with a PCMCIA 3.3V/5V slot for **one type II** PC Card. Make sure you install the driver for the PC Card/Card Reader (see ***"PCMCIA & Card Reader (WinXP)" on page 4 - 9***).

Inserting and Removing PC Cards

- Align the PC Card with the slot and push it in until it locks into place.
- To remove a PC Card, simply press the eject button 1 next to the slot.

Figure 2 - 6
PC Card Slot

4-in-1 Card Reader

The card reader allows you to use some of the latest digital storage cards. Push the card into the slot and it will appear as a removable device.

- MMC (MultiMedia Card)
- SD (Secure Digital)
- MS (Memory Stick)
- MS Pro (Memory Stick Pro)

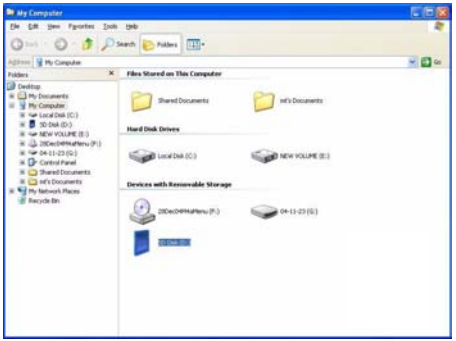


Figure 2 - 7
Removable Disks

Card Reader Cover

Make sure you keep the cover in the card reader when not is use. This will help prevent foreign objects and/or dust getting in to the card reader.

The cards will appear as removable disks on the computer and can be accessed in the same way as your hard disk(s). Make sure you install the driver for the PC Card/Card Reader (see ***"PCMCIA & Card Reader (WinXP)" on page 4 - 9***).

Ap-Key Buttons

These buttons access the Internet and e-mail, and toggle the WLAN/Bluetooth module power ON/OFF with one quick button press. Make sure you install the Ap-Key driver (see *"Ap-Key (WinXP)" on page 4 - 9*).

Ap-Key Buttons	Function
	Activate the default Internet browser
	Activate the default e-mail program
	Toggle the Wireless LAN/Bluetooth module power ON/OFF

Table 2 - 4
Ap-Key Buttons

Wireless Module Power Ap-Key Button

You can use this button to toggle the power ON/OFF for the **optional** Intel PRO/Wireless **2200BG (802.11b/g) OR 2195ABG (802.11a/b/g)** Mini PCI WLAN Module, and the **optional Bluetooth** module (see *"WLAN/Bluetooth Toggle Power Order" on page 7 - 2*). To enable the modules you will need to install the drivers/software for them (see *"Intel WLAN Driver Installation" on page 7 - 4* & *"Bluetooth Driver Installation" on page 7 - 5*). **Make sure the wireless modules are OFF when you are using the computer aboard aircraft (see sidebar)**.

My Computer Hot-Key

The Hot-Key  at the bottom left of the keyboard gives you quick one button access to the **My Computer** folder on your computer.

Other Keyboards

If your keyboard is damaged or you just want to make a change, you can use any standard USB keyboard. The system will detect and enable it automatically. However special functions/hot keys unique to the system's regular keyboard may not work.

Function Keys and Numeric Keypad

Function Keys

On the bottom-left of the keyboard is the **Fn** key or Function key. The **Fn** key allows you to change operational features instantly. To use the functions press and hold the **Fn** key, then press the appropriate function key (F5 - F12 etc.) located on your keyboard.

Table 2 - 5
Function Keys

Keys	Description
Fn	Function Key
Fn + Esc	Sleep/Resume Toggle
Fn + F5	Mute Toggle
Fn + F6	Display Toggle (see *"Display Devices & Display Modes" on page 3 - 8*)
Fn + F7	**Toggle SRS WOW Surround Sound ON/OFF**
Fn + F8	**Toggle Power to the PC Camera Module**
Fn + F9	Decrease LCD Brightness
Fn + F10	Increase LCD Brightness
Fn + F11	Decrease Audio Volume
Fn + F12	Increase Audio Volume
Fn + Scr	Scroll Lock Toggle

Numeric Keypad

The keyboard has an embedded numerical keypad for easy numeric data input. The numeric keys are highlighted by a yellow typeface.

Activate the **Number Lock** feature by pressing the **Num Lock** key at the top right of the keyboard. You may check if **Number Lock** is activated or not by looking at the LED status indicators (see *"LED Indicators" on page 2 - 2*).

Activate **Scroll Lock** by pressing and holding the **Fn** key, and then press the **Scr Lk** key at the top right of the keyboard.

Figure 2 - 8
Keyboard

Special Characters

Some software applications allow the number-keys to be used with **Alt** to produce special characters. These special characters can only be produced by using the numeric keypad. Regular number keys (in the upper row of the keyboard) will not work. Make sure that **Num Lock** is on.

Mouse Driver

If you are using an external mouse your operating system may be able to auto-configure your mouse during its installation or only enable its basic functions. Be sure to check the device's user documentation for details.

TouchPad and Buttons/Mouse

The TouchPad is an alternative to the mouse; however, you can also add a mouse to your computer through one of the USB ports. The TouchPad buttons function in much the same way as a two-button mouse. The central button may be configured to function as you require.

Install the TouchPad driver (see page ***4 - 9***) and configure the functions by double-clicking the TouchPad driver icon on the **taskbar**, or by from the **Mouse** control panel in ***Windows*** (**Start** menu and point to **Settings** and click **Control Panel**, then double-click the **Mouse** icon). In ***Windows XP*** the **Mouse** control panel is in the **Printers and Other Hardware Category**.

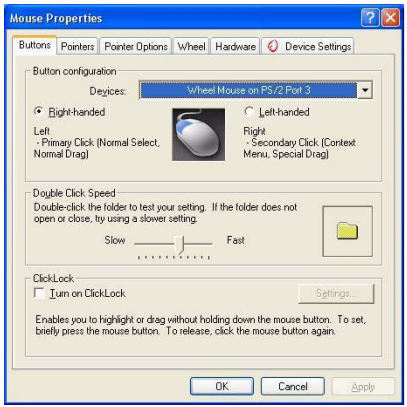


Figure 2 - 9
Mouse Properties

Audio Features

You can configure the audio options on your computer from the **Sounds and Audio Devices** *Windows* control panel, or from the **Sound Effect Manager** icon in the taskbar/control panel (this will bring up the Realtek Audio Configuration menus). The volume may also be adjusted by means of the **Fn + F11/F10** key combination. The audio system features SRS **WOW** Surround Sound Technology inside (SRS/ TruSurround/ TruBass / Focus Enhancement) and can be toggled ON/OFF using the **Fn + F7** key combination.

TruBass Software Support

SRS WOW Surround Sound Technology provides **TruBass** hardware support. Turn off this function in any software applications which provide **TruBass** support. In **Windows Media Player** this item is in the **View > Enhancements > SRS WOW Effects** menu. The SRS WOW Effects should be turned off (see left).

Sound Volume Adjustment

How high the sound volume can be set depends on the setting of the volume control within ***Windows***. Click the Volume icon on the taskbar to check the setting.

Figure 2 - 10
Realtek Audio Configuration Menus

Adding a Printer

The most commonly used peripheral is a printer. The following conventions will help you to add a printer, however it is always best to refer to the printer manual for specific instructions and configuration options.

USB Printer

Most new printers have a USB interface connection. You may use any one of the ports to connect the printer.

Install Instructions:

1. Set up the printer according to its instructions (unpacking, paper tray, toner/ink cartridge etc.).
2. Turn ON the computer.
3. Turn ON the printer.
4. Connect the printer's USB cable to one of the USB ports on the computer.
5. ***Windows*** will identify the printer and either load one of its own drivers or ask you to supply one. Follow the on-screen instructions.

Parallel Printer

This is still a very common type of printer. The install instructions are in the sidebar.

Parallel Printer

After setting up the printer attach the parallel cable to the printer.

Connect the printer's parallel cable to the Parallel port.

Turn ON the printer, then the computer.

Windows will identify the printer and either load one of its own drivers or ask you to supply one. Follow the on-screen instructions.

Chapter 3: Advanced Controls

Overview

This chapter covers:

- Advanced Video Controls
- NVIDIA Display Properties
- Display Devices & Display Modes
- Attaching Other Displays
- Power Management Features
- The Power Sources
- Power Schemes
- System Power Options
- Configuring the Power Button
- Battery Information

Drivers

You are unable to use most advanced controls until the necessary drivers and utilities are properly installed. If your system hasn't been properly configured (your service representative may have already done that for you), refer to ***"Installation Procedure" on page 4 - 6*** for installation instructions.

Protecting the LCD

Do not allow any foreign objects (i.e. paper or plastic) to get between the lid/LCD and the work panel. They could damage or scratch the LCD and/or accidentally activate the close cover switch.

Advanced Video Controls

This section is about making adjustments for the LCD, and switching display devices. You can switch display devices with the **Fn** + **Display (F6)** toggle.

Opening the LCD

As you open the lid, adjust it so you can look at the screen straight on, without any glare. If necessary, adjust the brightness controls (**Fn** + **F9/F10**).

Figure 3 - 1
Brightness Controls

NVIDIA Display Properties

The video interface lets you change the screen resolution and color output to whatever is most comfortable/efficient for you. This is a matter of hardware, video memory and the driver for your operating system. The driver interface shows the available options.

More advanced video configuration options are provided in the **NVIDIA Display Properties control panel** tab.

To access Display Properties in ***Windows***:

1. Click **Start**, point to **Settings** and click **Control Panel** (or click **Control Panel**).
2. Double-click **Display** (icon) - In the **Appearances and Themes** category.
3. Click **Settings** (tab) in the **Display Properties** dialog box.
4. Move the slider to the preferred setting in **Screen area/resolution** 1 (***Figure 3 - 2 on page 3 - 4***).
5. Click the arrow, and scroll to the preferred setting In **Colors/Color quality** 2 (***Figure 3 - 2 on page 3 - 4***).
6. Click **Advanced** (button) 3 (***Figure 3 - 2 on page 3 - 4***) to bring up the **Advanced properties** tabs.
7. Click **GeForce Go 6600** (tab).
8. Click **Additional Properties** (button) for further video options.

NVIDIA Taskbar Icon

Click the NVIDIA icon  in the taskbar to bring up a menu (see ***Figure 3 - 4 on page 3 - 6***) which allows you to quickly make any video adjustments required.

If you cannot see the tray icon  , go to the **GeForce Go 6600** control panel tab and select the **Tools** item from the **Additional Properties** menu. Click the tickbox **Enable taskbar icon**, then click **Apply**.

Desktop Access to GeForce Go 6600 Control Panel

To access the GeForce Go 6600 control panel from the desktop:

1. Right-click the **desktop**.
2. Point to **NVIDIA Display** and click **Laptop Display**.

Windows Display Properties

Clicking through the tabs allows you to make any video adjustments you require.

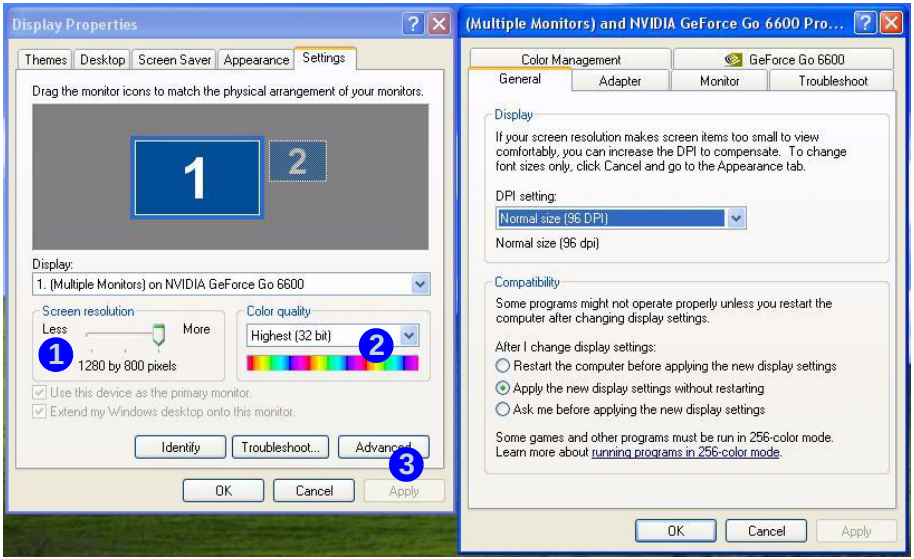


Figure 3 - 2
Display Properties

Additional Properties

The items listed in the **Additional Properties** window allow you to configure your display(s). If the items do not display you can either click the **Additional Properties** button, or click the icon .

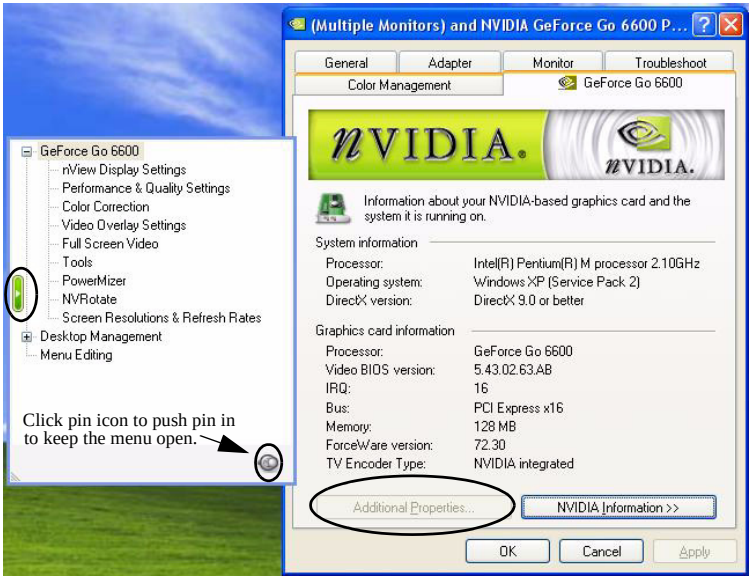
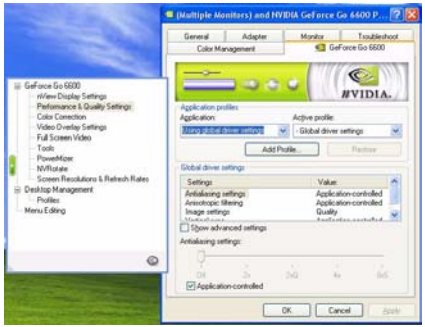
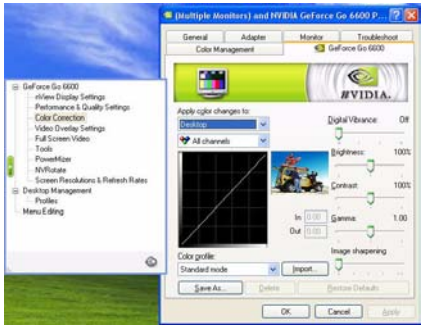


Figure 3 - 3
Additional Properties

Some screen examples are shown on the following page.

You may make changes to the Display Settings, Color Correction, Video Overlay, Resolutions, Refresh Rates and Screen Rotation etc. by clicking the appropriate tab and adjusting the setting.





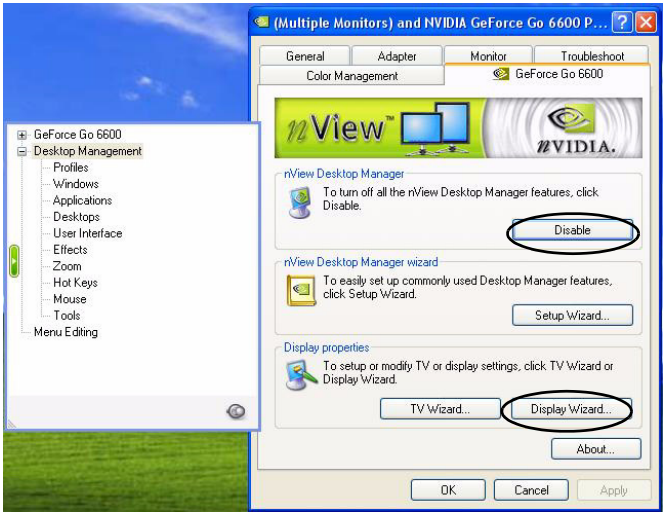
Right-click on a control panel item to bring up a Help Help menu (see sidebar).

Figure 3 - 4
Screen Examples

NVIDIA nView Desktop Manager

The **nView Desktop Manager** allows quick access to control panels for video features. The Control panel may be accessed as follows.

1. Click **Start**, point to **Settings** and click **Control Panel** (or click **Control Panel**).
2. Double-click **NVIDIA nView Desktop Manager** (icon) - Click "**Switch to Classic View"** from the left of the menu if you are in **Category View**.
3. Click the **Enable** button.



Click the **Enable** button to display the **Desktop Management** options menu.

The **Display Wizard** helps you to quickly configure any attached displays.

nView Desktop Manger from Additional Properties

You can view the nView Desktop Manager control panels from the Additional Properties window.

Click **Additional Properties** from the **GeForce Go 6600** control panel. Click the **Desktop Management** item and click the **Enable** button to display the options.

Figure 3 - 5
Desktop Manager

Display Wizard

Use the **Display Wizard** in the **Desktop Management** window to quickly setup and configure any attached displays (see *Figure 3 - 5 on page 3 - 7*).

Cyberlink Power DVD

Do not switch display modes (e.g. from **Dualview** to **Clone** etc.) when playing DVDs in the Cyberlink Power DVD 6 program. Set the display mode **before** launching the program.

Display Devices & Display Modes

Besides the built-in LCD, you can also use an external monitor/flat panel display or TV as your display device. The display devices and options are as follows:

1. The notebook's built-in LCD.
2. An external monitor connected to the external monitor port.
3. A TV connected to the S-Video-Out Port.

Single Display

Only one of your displays is used.

Clone Mode

Clone Mode simply shows an exact copy of the Primary display desktop on the other display(s). This mode will drive multiple displays with the same content and each display device can be configured independently.

Dualview Mode

Dualview Mode treats both connected displays as separate devices, and they act as a virtual desktop resulting in a large workspace. When Dualview is enabled, you can drag any icons or windows across to the other display desktop. It is therefore possible to have one program visible in one of the displays, and a different program visible in the other display.

Attaching Other Displays

Connect an external display to the appropriate port and configure it as follows.

1. Attach your external monitor to the external monitor port (or TV to the S-Video-Out port), and turn it on.
2. Click **Additional Properties** in the **GeForce Go 6600 Properties** control panel tab (see *"Additional Properties" on page 3 - 5*).
3. Select **nView Display Settings**.
4. Select the display mode from the **nView Display Mode** drop box.
5. Select **Apply**.
6. Click **Yes** to confirm the settings.

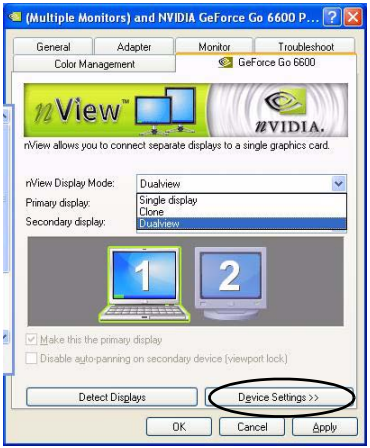


Figure 3 - 6
nView Display Settings

Function Key Combination

You can use the **Fn + F6** key combination to toggle through the display options:

- Notebook Only
- External Display Only
- Notebook + External Display

Make sure you give the displays enough time to refresh.

nView Display Mode Options

The display options listed under the Primary display: / Secondary display: drop boxes will differ according to the displays attached, and the **Display Mode** chosen.

7. Select the display option from the **Primary Display/ Secondary Display** dropbox. If you have a TV and external monitor/flat panel display attached you will have a number of available options (see sidebar).
8. Select and **Apply** the appropriate option.

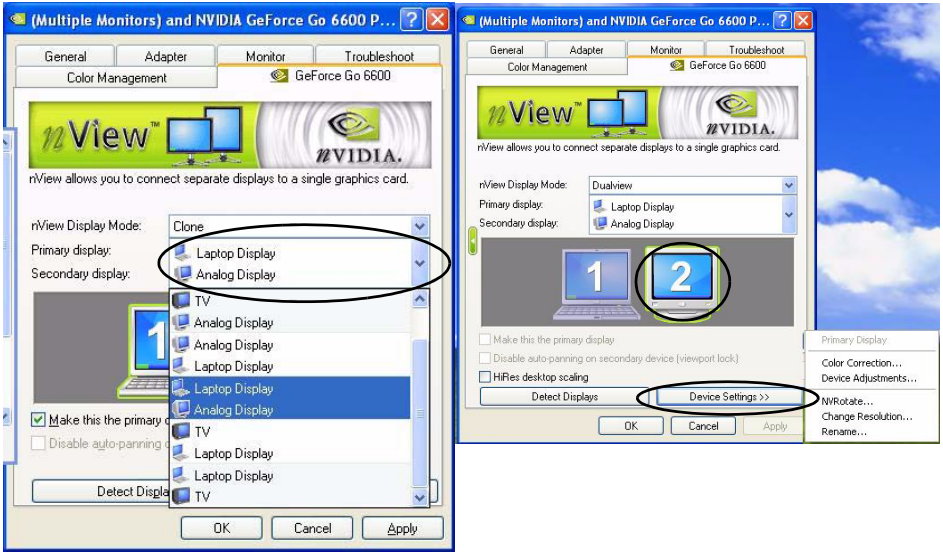


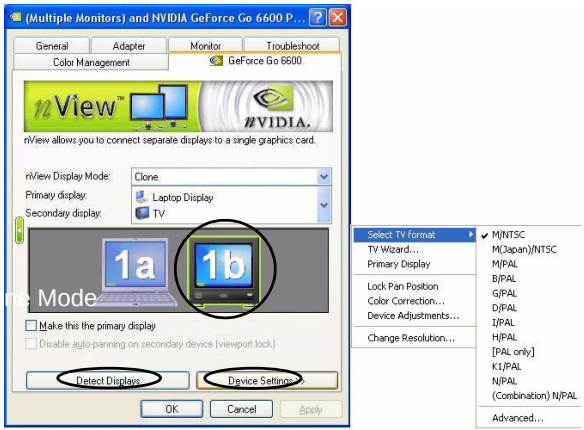
Figure 3 - 7
Primary/Secondary Display Dropbox & Device Settings

9. Click the monitor icon to select it, then click the **Device Settings** button to make any adjustments for the selected display (including **Screen Resolutions & Refresh Rates**).
10. Click **Apply** to confirm any setting changes.

Enabling TV Display

To display desktop images on a TV, connect the TV to your computer by using an S-Video cable from the TV to computer's S-Video-Out port.

Enable the TV display from the **nView Display Settings** tab (see ***"Attaching Other Displays" on page 3 - 9***). The TV will appear as a display option (select the display option from the **Primary Display/ Secondary Display** dropbox) when attached to the S-Video-Out port. Click to **Apply** the setting.



Click the **Detect Displays** button to get a full range of options on the **Device Settings** menu. Click the TV icon, then click the **Device Settings** button.

TV Wizard

Use the **TV Wizard** in the **Device Settings menu** window to quickly setup and configure any attached TV.

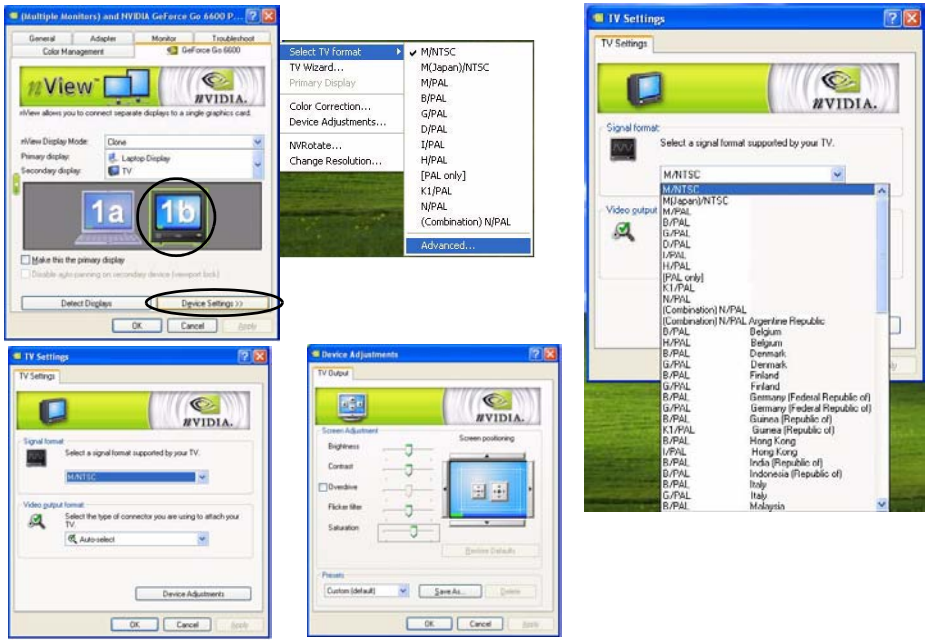
Dualview

In Dualview mode the TV will be the secondary display.

Figure 3 - 8
TV Settings

Set the **TV format** from the **Select TV Format menu**. The **Advanced** option at the bottom of the **Select TV Format** menu allows you to select TV format by country if you are unsure of your TV format.

Figure 3 - 9
TV Settings and Adjustments



Device Adjustments (**Device Settings** menu) allows you to make changes to the **TV output**.

Power Management Features

To conserve power, especially when using the battery, your computer uses the ACPI power management system. Power management conserves power by controlling individual components of the computer (the monitor and hard disk drive) or the whole system.

Advanced Configuration and Power Interface

The **ACPI** interface provides the computer with enhanced power saving techniques and gives the operating system (OS) direct control over the power and thermal states of devices and processors. For example, it enables the OS to set devices into low-power states based on user settings and information from applications. ACPI is fully supported in *Windows XP*.

Shutdown

Note that you should always shut your computer down by choosing the **Turn Off Computer** command from the **Start** menu in ***Windows***. This will help prevent hard disk or system problems.

Forced Off

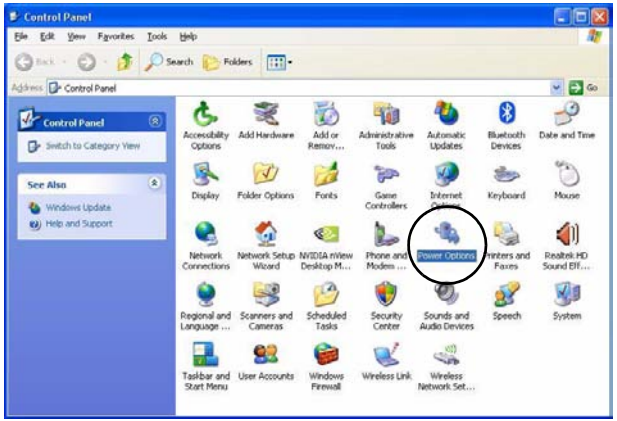
If the system “hangs”, and the **Ctrl + Alt + Del** key combination doesn’t work, press the power button for **4 seconds**, or longer, to force the system to turn itself off.

Power Options

When the computer is on, you can use the power button as a Standby/Hibernate/Shutdown hot-key button when it is pressed for less than **4 seconds** (pressing and holding the power button for longer than this will shut the computer down). Use **Power Options** in the ***Windows*** control panel to configure this feature.

Figure 3 - 10
Power Options Control Panel

1. Click **Start**, point to **Settings** and click **Control Panel** (or click **Control Panel**).
2. Double-click **Power Options** (icon) - In the **Performance and Maintenance** category.



The Power Sources

The computer can be powered by either an AC adapter or a battery pack.

AC Adapter

Use only the AC adapter that comes with your computer. The wrong type of AC adapter will damage the computer and its components.

1. Attach the AC adapter to the DC-in jack on the right of the computer.
2. Plug the AC power cord into an outlet, and then connect the AC power cord to the AC adapter.
3. Raise the lid/LCD to a comfortable viewing angle.
4. Press the power button to turn “On”.

Battery

The battery allows you to use your computer while you are on the road or when an electrical outlet is unavailable. Battery life varies depending on the applications and the configuration you're using. **To increase battery life, let the battery discharge completely before recharging** (see ***“How do I completely discharge the battery?” on page 3 - 24***).

We recommend that you do not remove the battery. For more information on the battery, please refer to ***“Battery Information” on page 3 - 21***.

Power Button as Standby or Hibernate Button

If you are using a fully ACPI-compliant OS, (such as Windows XP) you can use the OS’s “Power Options” control panel to set the power button to send the system into Standby or Hibernate mode (see your OS’s documentation, or ***“Configuring the Power Button” on page 3 - 20*** for details).

Resuming Operation

The system can resume from Monitor or Hard Disk Standby by pressing a key on the keyboard.

Power Schemes

You can set your computer to conserve power through individual components by means of **Power Schemes**. You can also adjust the settings for each scheme to set the monitor to turn off after a specified time, and the computer's hard disk motor to turn off if the hard disk drive has not been accessed for a specified period of time (if the system reads or writes data, the hard disk motor will be turned back on). The schemes may also be set to set a specified time for the system to enter **Standby** or **Hibernate** modes (see ***"System Power Options" on page 3 - 18***).

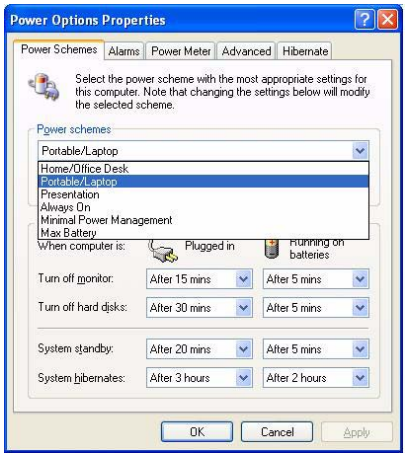


Figure 3 - 11
Power Schemes

Each ***Windows*** **Power Scheme** will also adjust the processor performance of your machine in order to save power. This is worth bearing in mind if you are experiencing any reduced performance (especially under DC/battery power).

Choose the **Home/Office Desk** scheme for maximum performance when the computer is powered from an AC power source. Choose the **Max Battery** scheme (bear in mind that this scheme may slow down the overall performance of the computer in order to save power) for maximum power saving when the computer is battery (DC power) powered. ***Windows*** will use **Portable/Laptop** as the default scheme.

Windows will use **Portable/Laptop** as the default scheme.

System Power Options

You can use the system power options to stop the computer's operation and restart where you left off. This system features **Standby** and **Hibernate** sleep mode levels (**Hibernate** mode will need to be enabled by clicking the option in the **Hibernate** tab in the **Power Options** control panel - ***Figure 3 - 12 on page 3 - 19***).

Hibernate Mode vs. Shutdown

Hibernate mode and Shutdown are the same in that the system is off and you need to press the power button to turn it on. Their main difference is:

When you come back from hibernation, you can return to where you last left off (what was on your desktop) without reopening the application(s) and file(s) you last used.

You can use either method depending on your needs.

Standby Mode vs. Hibernate Mode

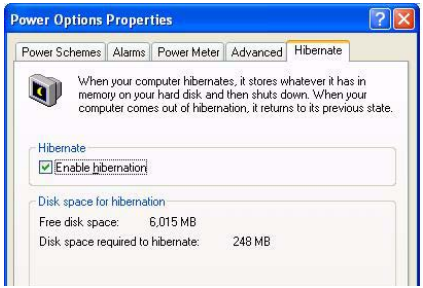
If you want to stay away from your work for just a while, you can put the system on standby instead of in hibernation. It takes a longer time to wake up the system from **Hibernate** mode than from **Standby** mode.

Standby

Standby saves the least amount of power, but takes the shortest time to return to full operation. During Standby the hard disk is turned off, and the CPU is made to idle at its slowest speed. All open applications are retained in memory. When you are not using your computer for a certain length of time, which you specify in the operating system, it will enter Standby mode to save power.

Hibernate

Hibernate uses no power and saves all of your information on a part of the HDD before it turns the system off. Although it saves the most power it takes the longest time to return to full operation. You can set your computer to automatically enter Hibernate mode when the battery power is almost depleted. You will need to enable Hibernate mode from the **Hibernate** tab in the Power Options control panel. **The system will resume from Hibernate mode by pressing the power button**.



System Resume

The system can resume from Standby mode by:

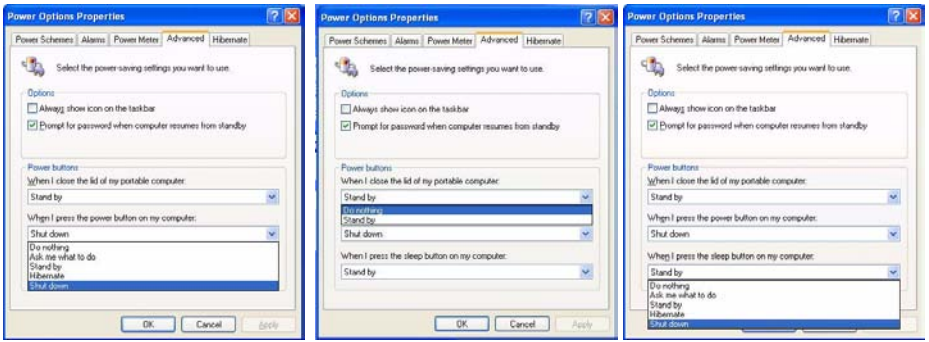
- Pressing the power button
- An alarm resume that is enabled and expires
- An incoming call received on the modem (if enabled)
- Network card activity (if enabled)

Figure 3 - 12
Enable Hibernation

Configuring the Power Button

The power button may be set to send the computer in to either **Standby** or **Hibernate** mode (***Figure 3 - 13***). In **Standby** mode, the LED will flash green. In **Hibernate** mode the LED will be off. If you are in a power saving mode set to save power through individual components (e.g. hard disk, monitor), the LED will remain green.

Figure 3 - 13
Power Options (Advanced - Power Buttons)



Power Button Lid Sleep/Resume (Sleep) Button

Sleep Button

You may also configure the **Sleep/Resume** key combination (**Fn + Esc**) from the menu illustrated in ***Figure 3 - 13***. In ***Windows*** this is referred to as the **Sleep** button.

Battery Information

Please follow these simple guidelines to get the best use out of your battery.

New Battery

Always completely discharge, then fully charge, a new battery (see *"Battery FAQ" on page 3 - 24* for instructions on how to do this).

Battery Life

Your computer's battery life is dependent upon many factors, including the programs you are running, and peripheral devices attached. **Power Options** (you may set low battery **Alarms** and actions, and check the **Power Meter** from the **Power Options** control panel), and settings in the OS will help prolong the battery life if configured appropriately.

Low Battery Warning

When the battery is critically low, immediately connect the AC adapter to the computer or save your work, otherwise, the unsaved data will be lost when the power is depleted.

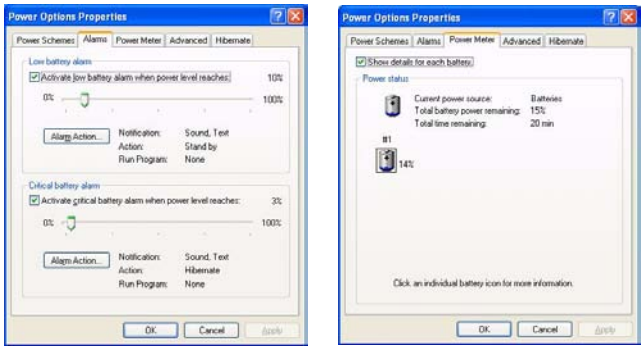


Figure 3 - 14
Power Options (Alarm & Power Meter)

Conserving Battery Power

To conserve battery power:

Lower the brightness level of the LCD display. The system will decrease LCD brightness slightly to save power when it is not powered by the AC adapter.

Close modem or communication applications when they are not being used.

Remove any unused PC Cards from the computer (PC Cards quickly use up battery power even if the system enters sleep mode).

Disconnect any unnecessary external devices.

Battery life may be shortened through improper maintenance. **To optimize the life and improve its performance, fully discharge and recharge the battery at least once every 30 days**.

We recommend that you do not remove the battery yourself. If you do need to remove the battery for any reason see ***"Removing the Battery" on page 6 - 3***.

Recharging the Battery with the AC Adapter

The battery pack automatically recharges when the AC adapter is attached and plugged into an electrical outlet. If the computer is powered on, and in use, it will take several hours to fully recharge the battery. When the computer is turned off but plugged into an electrical outlet, battery charge time is less. (Refer to ***"LED Power & Communication Indicators" on page 2 - 3*** for information on the battery charge status, and to ***"Battery Information" on page 3 - 21*** for more information on how to maintain and properly recharge the battery pack.)

Proper Handling of the Battery Pack

- DO NOT disassemble the battery pack under any circumstances
- DO NOT expose the battery to fire or high temperatures, it may explode
- DO NOT connect the metal terminals (+, -) to each other

Damaged Battery Warning

Should you notice any physical defects (e.g. the battery is bent out of shape after being dropped), or any unusual smells emanating from the notebook battery, shut your computer down immediately and contact your service center. If the battery has been dropped we do not recommend using it any further, as even if the computer continues to work with a damaged battery in place, it may cause circuit damage, which may possibly result in fire. It is recommended that you replace your computer battery every two years.

Caution

Danger of explosion if battery is incorrectly replaced.

Replace only with the same or equivalent type recommended by the manufacturer. Discard used battery according to the manufacturer's instructions.

Battery FAQ

How do I completely discharge the battery?

Use the computer with battery power until it shuts down due to a low battery. Don't turn off the computer by yourself even when you see a message that indicates the battery is critically low, just let the computer use up all of the battery power and shut down on its own. Disable the **Power Options** functions in the **Control Panel**, especially any **Alarms** (**unclick** the tickboxes - see *3 - 21*) and **Schemes** (change all the settings to **Never** - see page *3 - 16*). As the battery nears the end of its life save and close any critical files.

How do I fully charge the battery?

When charging the battery, don't stop until the LED charging indicator light changes from orange to green.

How do I maintain the battery?

Completely discharge and charge the battery at least once every 30 days or after about 20 partial discharges.

Chapter 4: Drivers & Utilities

Overview

This chapter deals with installing the drivers and utilities essential to the operation or improvement of some of the computer's subsystems. The system takes advantage of some newer hardware components for which the latest versions of most available operating systems haven't built in drivers and utilities. Thus, some of the system components won't be auto-configured with an appropriate driver or utility during operating system installation. Instead, you need to manually install some system-required drivers and utilities. This chapter covers driver and utility installation instructions for ***Windows XP*** (Professional & Home).

What to Install

The ***Device Drivers & Utilities + User's Manual CD-ROM*** contains the drivers and utilities necessary for the proper operation of the computer. Additional CD-ROMs are provided with any optional modules included in your purchase (see below). ***Table 4 - 1, on page 4 - 6*** lists what you need to install manually according to your choice of the operating system. **It is very important that the drivers are installed in the order indicated in the table**.

Module Driver Installation

The procedures for installing drivers for the **optional Wireless LAN**, **Bluetooth** and **PC Camera** modules are provided in ***"Wireless & PC Camera Modules" on page 7 - 1***. Make sure that the drivers are installed in the order indicated in ***Table 4 - 1, on page 4 - 6***.

Navigate (Browse..) to D:

You will notice that many of the instructions for driver installation require you to "**Navigate (Browse) to D:**". We assume that you will install all drivers and utilities from the built-in CD device and it is assigned to "**Drive D:**". In addition, all file extensions can be seen

In this case "D:" is the drive specified for your CD device. Not all computers are setup the same way, and some computers have the CD listed under a different drive letter - e.g. if you have two hard drives (or hard disk partitions) one may be designated as "Drive C:" and the other as "Drive D:". In this case the CD device may be designated as "Drive E:" - Please make sure you are actually navigating to the correct drive letter for the CD device.

When you click the **Browse** (button) after clicking **Run** in the **Start** menu you will see the "**Look in:**" dialog box at the top of the **Browse** window. Click the scroll button to navigate to **My Computer** to display the devices and drive letters.

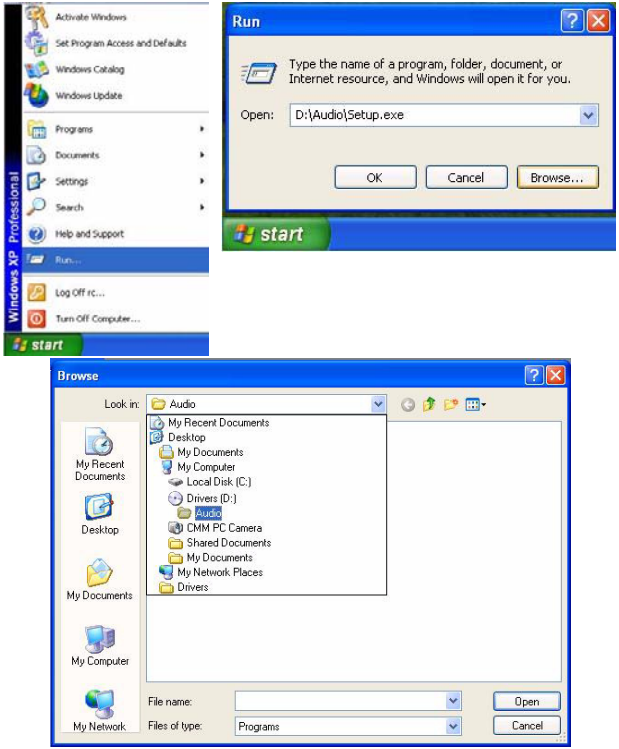


Figure 4 - 1 **- Navigate (Browse..) to..**

Authorized Driver Message

If you receive a message telling you that the driver you are installing is not authorized (**Digital Signature Not Found)**, just click **Continue Anyway** to ignore the message and continue the installation procedure.

You will receive this message in cases where the driver has been released after the version of ***Windows*** you are currently using. All the drivers provided will have already received certification for ***Windows***.

Version Conflict Message

During driver installation if you encounter any "file version conflict" message, please click **Yes** to choose to keep the existing (newer) version.

Updating/Reinstalling Individual Drivers

If you wish to update/reinstall individual drivers it may be necessary to uninstall the original driver. To do this go to the **Control Panel** in the ***Windows OS*** and double-click the **Add/Remove Programs** item. **If you see the individual driver listed** (if not see below), uninstall it, following the on screen prompts (it may be necessary to restart the computer). Go to the appropriate section of the manual to complete the update/reinstall procedure for the driver in question.

If the driver is not listed in the **Add/Remove Programs** item:

1. Click **Start** (menu), point to **Settings** and click **Control Panel** (or click **Start > Control Panel**).
2. Double-click **System** (icon); **System** (icon) is in **Performance and Maintenance** (category).
3. Click **Hardware** (tab) > **Device Manager** (button).
4. Double-click the **device** you wish to update/reinstall the driver for (click "+" to see sub-items).
5. Look for the **Update Driver** button (check the **Driver** tab) and follow the on screen prompts.

Driver Installation

Insert the ***Device Drivers & Utilities + User's Manual CD-ROM*** and the ***Notebook Driver Installation*** application will run automatically. If you want to install the driver manually see ***"Manual Driver Installation" on page 4 - 5***.

1. Check the driver installation order from ***Table 4 - 1, on page 4 - 6*** (**the drivers must be installed in this order**) which is the same as that listed in the driver installation screen menu.
2. Double-click to select the name of the driver you wish to install.
3. Wait for the driver to start installing.
4. The computer may need to restart (check the instructions in this chapter).
5. Make a note of the drivers you have installed.
6. To get back to the *Driver Installation* screen after a restart click **Start** (menu) > **Run**... and navigate (**Browse..**) to **D:\drsetup5p.exe** and click **OK**.
   OR
   Double-click the **My Computer** icon, and then double-click the CD icon.

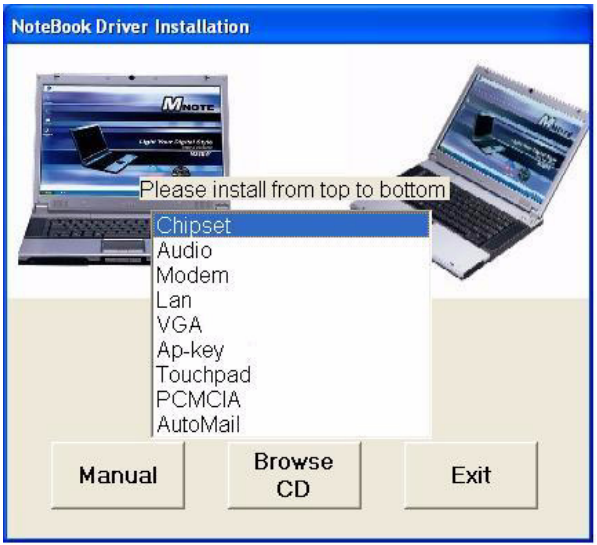


Figure 4 - 2
Notebook Driver Installation Screen

Manual Driver Installation

If you wish to install the drivers manually, click the **Exit** button to quit the ***Notebook Driver Installation*** application, then follow the manual installation procedure for each driver. The manual installation procedure begins with instructions on how to browse to the executable file; "Click **Start** (menu) > **Run..**".

New Hardware Found

If you see the message "**New Hardware Found**" (**Found New Hardware Wizard)** during the installation procedure (**other than when outlined in the driver install procedure**), click **Cancel** to close the window, and follow the installation procedure.

Service Packs

Make sure you have installed the appropriate Service Pack **before** installing all the drivers.

Service Pack Installed

To see which **Service Pack** is currently installed on your computer go to the **General** tab of the **System** control panel. Right-click the **My Computer** icon on the desktop or in the **Start** menu and select **Properties**. The Service Pack currently installed on your system will be listed under the "**System**:" heading. (If no Service Pack information is listed, then no Service Pack is installed.)

Windows XP Service Pack 2

Make sure you install **Windows XP Service Pack 2** (or a *Windows XP* version which includes Service Pack 2) **before installing any drivers**. Service Pack 2 includes support for **USB 2.0**.

Installation Procedure

This section covers driver and utility installation instructions for *Windows XP* (Professional & Home).

Windows XP Driver (SP2)	Page #
Chipset	4 - 6
Audio	4 - 7
Modem	4 - 7
Network (LAN)	4 - 8
Video	4 - 8
Ap-Key Buttons	4 - 9
TouchPad	4 - 9
PC Card (PCMCIA) & Card Reader	4 - 9
Wireless LAN	7 - 4
Bluetooth	7 - 5
PC Camera	7 - 7
AutoMail Checker	4 - 10

Table 4 - 1 **- Driver Installation Order**

Chipset (WinXP)

1. Double-click **Chipset** from the Driver Installation menu.
   OR
   Click **Start** (menu) > **Run...** and navigate (**Browse..**) to **D:\Drivers\00Chipset\Setup.exe** and click **OK**.
2. Click **Next** > **Yes** > **Next**.
3. Click **Finish** to restart the computer.

Audio (WinXP)

1. Double-click **Audio** from the Driver Installation menu.
   OR
   Click **Start** (menu) > **Run...** and navigate (**Browse..**) to **D:\Drivers\01AUDIO\Setup.exe** and click **OK**.
2. Click **Next** (click **Cancel** if ***The Found New Hardware Wizard*** appears).
3. Click **Finish** to restart the computer.
4. When the computer restarts click **Cancel** if the ***The Found New Hardware Wizard*** appears.
5. Click **Yes** to restart the computer (click **Cancel** if ***The Found New Hardware Wizard*** appears after the restart).

Modem (WinXP)

1. Double-click **Modem** from the Driver Installation menu.
   OR
   Click **Start** (menu) > **Run...** and navigate (**Browse..**) to **D:\Drivers\02Modem\SSETUP.EXE** and click **OK**.
2. Click **OK**.
3. The modem is ready for dial-up configuration.

Modem Country Selection

Be sure to check if the modem country selection is appropriate for you (**Control Panel** > **Phone and Modem Options**).

LAN (WinXP)

1. Double-click **Lan** from the Driver Installation menu.
   OR
   Click **Start** (menu) > **Run...** and navigate (**Browse..**) to **D:\Drivers\03LAN\SetupYukonWin.exe** and click **OK**.
2. Click **Next**.
3. Click the button to accept the license and click **Next**.
4. Click **Next > Install > Finish**.
5. The network settings can now be configured.

Video (WinXP)

1. Double-click **VGA** from the Driver Installation menu.
   OR
   Click **Start** (menu) > **Run...** and navigate (**Browse..**) to **D:\Drivers\04Vga\setup.exe** and click **OK**.
2. To continue click **Next** (click **Continue Anyway/Yes** if asked if you want to continue at any time).
3. Click **Finish** to restart the computer.
4. You can then configure the initial setting from the ***NVIDIA Display Setup Wizard***.
5. See ***"NVIDIA Display Properties" on page 3 - 3*** for details on adjusting the video settings.

Ap-Key (WinXP)

1. Double-click **Ap-key** from the Driver Installation menu.
   OR
   Click **Start** (menu) > **Run... and** navigate (**Browse..**) to **D:\Drivers\05Ap-key\Setup.exe** and click **OK**.
2. Choose the language you prefer, and click **OK**.
3. Click **Next**.
4. Click **Finish** to restart your computer.

TouchPad (WinXP)

1. Double-click **TouchPad** from the Driver Installation menu.
   OR
   Click **Start** (menu) > **Run...** and navigate (**Browse...**) to **D:\Drivers\06Touchpad\Setup.exe** and click **OK**.
2. Click **Next** > **Next** > **Next**.
3. Click **Finish** to restart your computer.
4. See page *2 - 16* for configuration details.

PCMCIA & Card Reader (WinXP)

1. Double-click **PCMCIA_CardReader** from the Driver Installation menu.
   OR
   Click **Start** (menu) > **Run...** and navigate (**Browse..**) to **D:\Drivers\07Pcmcia\setup.exe** and click **OK**.
2. Click **Next** > **Yes**.
3. Click **Finish**.

Wireless LAN (WinXP)

See install procedure in *"Intel WLAN Driver Installation" on page 7 - 4*.

Bluetooth (WinXP)

See install procedure in *"Bluetooth Driver Installation" on page 7 - 5*.

PC Camera (WinXP)

See install procedure in *"PC Camera Driver Installation" on page 7 - 7*.

Latest PC Camera Driver Information

Check the **PC Camera CD**, and any accompanying insert pages, for the latest updated information on the PC Camera driver, which may override the information provided here.

AutoMail Checker (WinXP)

1. Run the Notebook Driver Installation application and double-click **AutoMail**.
   OR
   Click **Start** (menu) > **Run...** and navigate (**Browse..**) to **D:\Drivers\11Automail\SETUP.EXE** and click **OK**.
2. To continue click **Next** > **Next** > **Finish**.
3. Run the program from the **Auto Mail Checker** in the **Start** menu (**Start** > **Programs/All Programs** > **Auto Mail Checker**).
4. Click the icon  in the taskbar to input the e-mail account details.
5. For further details see *"Auto Mail Checker" on page 2 - 4*.

Chapter 5: BIOS Utilities

Overview

This chapter gives a brief introduction to the computer's built-in software:

Diagnostics: The **POST** (Power-On Self Test)

Configuration: The ***Setup*** utility
If your computer has never been set up, or you are making important changes to the system (e.g. hard disk setup), then you should review this chapter first and note the original settings found in ***Setup***. Even if you are a beginner, keep a record of the settings you find and any changes you make. This information could be useful if your system ever needs servicing.

There is one general rule: *Don't make any changes unless you are sure of what you are doing*. Many of the settings are required by the system, and changing them could cause it to become unstable or worse. If you have any doubts, consult your service representative.

BIOS Settings Warning

Incorrect settings can cause your system to malfunction. To correct mistakes, return to *Setup* and restore the ***Setup Defaults*** with <**F9**>.

The Power-On Self Test (POST)

Each time you turn on the computer, the system takes a few seconds to conduct a **POST**, including a quick test of the on-board RAM (memory).

As the **POST** proceeds, the computer will tell you if there is anything wrong. If there is a problem that prevents the system from booting, it will display a system summary and prompt you to run ***Setup***.

If there are no problems, the ***Setup*** prompt will disappear and the system will load the operating system. Once that starts, you can't get into ***Setup*** without rebooting.

POST Screen

1. **BIOS** information
2. CPU type
3. Memory status
4. Enter **Setup** prompt appears only during **POST**

Note: The **POST** screen as pictured is for guideline purposes only. The **POST** screen on your computer may appear slightly different.

Boot Time Diagnostic Screen

If you have **disabled** the Boot Time Diagnostic Screen, then the POST screen will not appear. You can still press **F2** to enter Setup (see page ***5 - 9***).

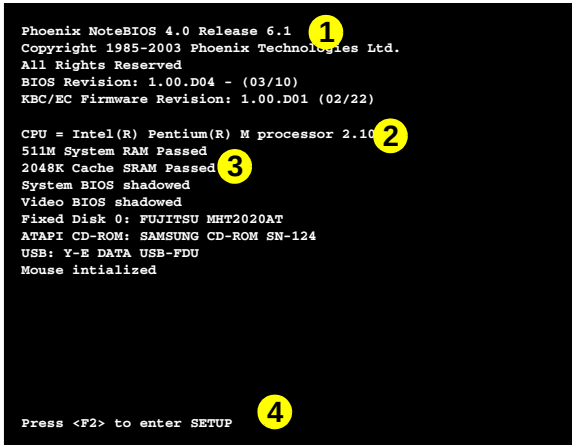


Figure 5 - 1
POST Screen

Failing the POST

Errors can be detected during the **POST**. There are two categories, “fatal” and “non-fatal”.

Fatal Errors

These stop the boot process and usually indicate there is something seriously wrong with your system. Take the computer to your service representative or authorized service center as soon as possible.

Non-Fatal Errors

This kind of error still allows you to boot. You will get a message identifying the problem (make a note of this message!) followed by the prompt:

- Press <F1> to resume
- <F2> to enter Setup

Press **F1** to see if the boot process can continue. It may work, without the correct configuration.

Press **F2** to run the **Setup** program and try to correct the problem. If you still get an error message after you change the setting, or if the “cure” seems even worse, call for help.

The Setup Program

The **Phoenix Setup** program tells the system how to configure itself and manage basic features and subsystems (e.g. port configuration).

Entering Setup

To enter ***Setup***, turn on the computer and press **F2** during the **POST**. The prompt (***Press F2 to Enter Setup***) seen in ***Figure 5 - 1 on page 5 - 2*** is usually present for a few seconds after you turn on the system. If you get a "Keyboard Error", (usually because you pressed **F2** too quickly) just press **F2** again.

If the computer is already on, reboot using the **Ctrl + Alt + Delete** combination and then hold down **F2** when prompted. The ***Setup*** main menu will appear.

Setup Screens

The following pages contain additional advice on **portions** of the ***Setup***.

Along the top of the screen is a menu bar with five (**5**) menu headings. When you select a heading, a new screen appears. Scroll through the features listed on each screen to make changes to ***Setup***.

Instructions on how to navigate each screen are in the box along the bottom of the screen. If these tools are confusing, press **F1** to call up a **General Help** screen, then use the arrow keys to scroll up or down the page.

The **Item Specific Help** on the right side of each screen explains the highlighted item and has useful messages about its options.

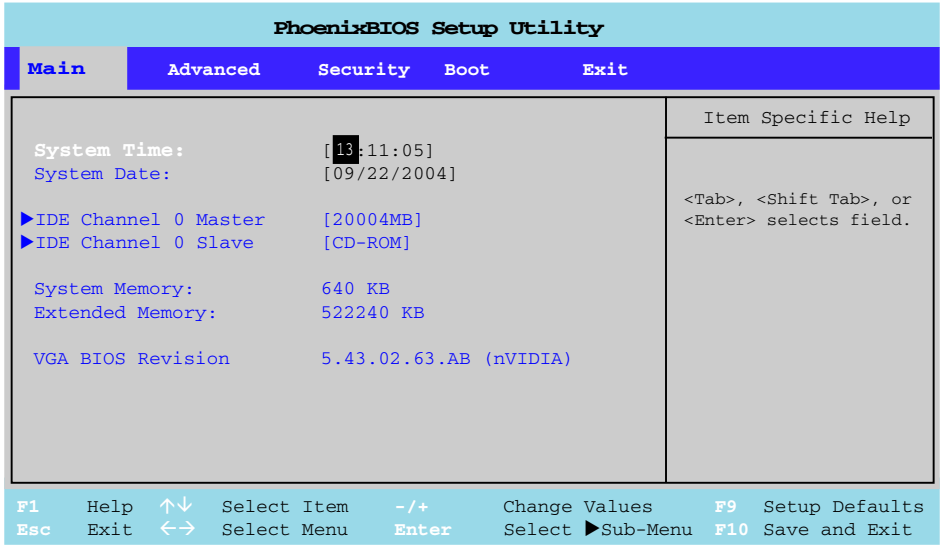
If you see an arrow ▶ next to an item, press **Enter** to go to a sub-menu on that subject. The sub-menu screen that appears has a similar layout, but the **Enter** key may execute a command.

Setup Menus

The **setup** menus shown in this section are for **reference** only. Your computer's menus will indicate the configuration appropriate for your model and options (and are subject to update without prior notice).

Main Menu

Figure 5 - 2
Main Menu



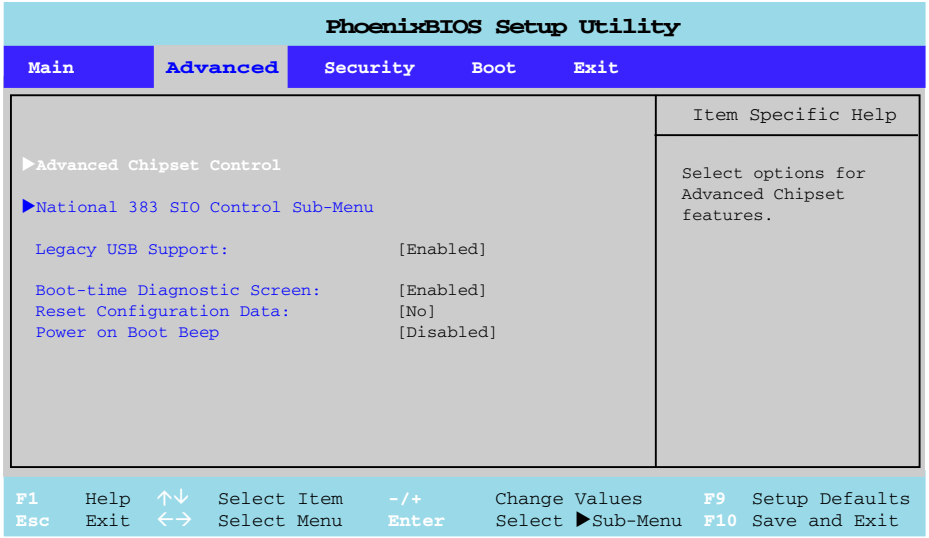
System Time & Date
The hour setting uses the 24-hour system (i.e., ØØ = midnight; 13 = 1 pm). If you can change the date and time settings in your operating system, you will also change these settings. Some applications may also alter data files to reflect these changes.

IDE Channel 0 Master/Slave
Pressing **Enter** here opens the sub-menu to show the configuration of either a CD/DVD type Device or HDD on the computer's IDE Channel 0. Use the ***Auto*** (Type:) setting to have the items configured automatically for you.

System/Extended Memory:
This item contains information on the system memory, and is not user configurable. The system will auto detect the amount of memory installed.

Advanced Menu

Figure 5 - 3
Advanced Menu



Advanced Chipset Control (Advanced Menu)
Pressing **Enter** here will provide valuable information on your system. It includes some data on Advanced Chipset Control features.

National 383 SIO Control Sub-Menu (Advanced Menu)
Pressing **Enter** here will provide a sub-menu that controls the configuration of various National 383 SIO devices.

Legacy USB Support (Advanced Menu)
Use this menu item to enable/disable the support for Legacy Universal Serial Bus.

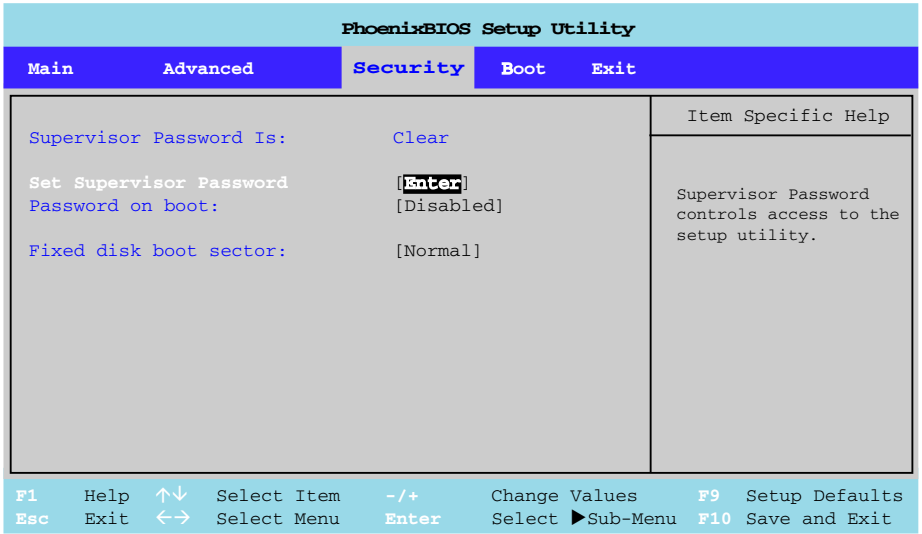
Boot-time Diagnostic Screen (Advanced Menu)
Use this menu item to enable/disable the display on the boot-time Diagnostic Screen.

Reset Configuration Data (Advanced Menu)
This item is set to ***No*** as default. You can change the setting to ***Yes*** if you have installed a new add-on which has reconfigured the system, resulting in such a serious system conflict that the operating system is unable to boot.

Power On Boot Beep (Advanced Menu)
Use this menu to enable/disable the single beep sound at the end of the POST. This item is "***Disabled***" by default.

Security Menu

Figure 5 - 4
Security Menu



Set Supervisor Password (Security Menu)

You can set a password for access to the ***Setup*** utility. This will not affect access to the computer OS, (only the ***Setup*** utility) unless you choose to set a Password on Boot (see over).

Password on boot: (Security Menu)
Specify whether or not a password (supervisor or user password) should be entered to boot the computer. If "***Enabled***" is selected, only users who enter a correct password can boot the system (**see the warning in the sidebar**). The default setting is "***Disabled***".

Note: To clear existing passwords press **Enter** and type the existing password, then press **Enter** for the new password (without typing any password entry) and **Enter** again to confirm the password clearance.

Fixed disk boot sector (Security Menu)
Enables you to write protect the boot sector of your hard disk to protect against viruses.

Password Warning

If you set a boot password (Password on boot is "Enabled"), **NEVER** forget your password.

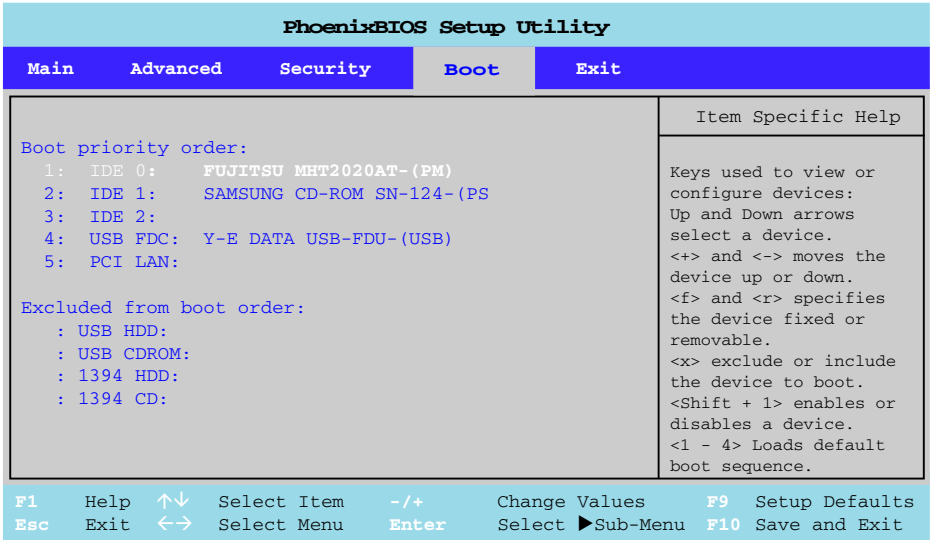
The consequences of this could be serious. If you cannot remember your boot password you must contact your vendor and you may lose all of the information on your hard disk.

Boot Menu

Figure 5 - 5
Boot Menu

IDE 0/2 Channel

IDE channel 0 is for parallel hard disks, and IDE channel 2 is for serial hard disks.



When you turn the computer on it will look for an operating system (e.g. ***WindowsXP***) from the devices listed in this menu, and **in this priority order**. If it cannot find the operating system on that device, it will try to load it from the next device in the order specified in the **Boot priority order**. Item specific help on the right is available to help you move devices up and down the order.

Boot devices usually are hard drives, floppy drives, and CD-ROMs/DVD-ROMs and Networks (LANs).

When you specify a device as a boot device on the **Boot Menu**, it requires the availability of an operating system on that device. Most home computers come with an operating system already installed on "Drive **C**:".

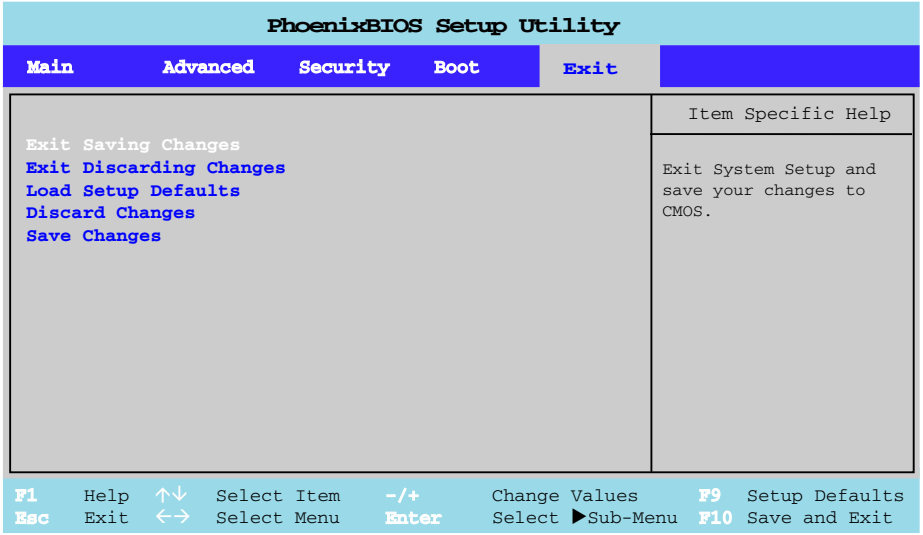
If you wish to boot from a CD-ROM/DVD-ROM you will need to add it to the boot order. As a general rule the order below is recommended:

1. Removable Devices (usually floppy disks)
2. CD-ROM/DVD-ROM Drive
3. Hard Drive
4. LAN

In everyday use you will usually boot from the hard drive, however there may be occasions when it is advantageous to boot from a floppy disk or CD-ROM/DVD-ROM.

Exit Menu

Figure 5 - 6
Exit Menu



Choosing to ***Discard Changes***, or ***Exit Discarding Changes***, will wipe out any changes you have made to the ***Setup***. You can also choose to restore the original ***Setup*** defaults that will return the ***Setup*** to its original state, and erase any previous changes you have made in a previous session.

Chapter 6: Upgrading The Computer

Overview

This chapter contains information on upgrading the computer. Follow the steps outlined to make the desired upgrades. If you have any trouble or problems you can contact your service representative for further help. Before you begin you will need:

- A small crosshead or Phillips screwdriver
- A small regular slotted (flathead) screwdriver
- An antistatic wrist strap

Before working with the internal components you will need to wear an antistatic wrist strap to ground yourself because static electricity may damage the components.

The chapter includes:

- Removing the Battery
- Upgrading the Hard Disk Drive
- Upgrading the System Memory (RAM)
- Upgrading the Optical (CD/DVD) Device

Please make sure that you review each procedure before you perform it.

Power Safety Warning

Before you undertake any upgrade procedures, make sure that you have turned off the power, and disconnected all peripherals and cables (including telephone lines). It is advisable to also remove your battery in order to prevent accidentally turning the machine on.

When Not to Upgrade

These procedures involve opening the system's case, adding and sometimes replacing parts.

You should **not** perform any of these upgrades if:

- Your system is still under warranty or a service contract
- You don't have all the necessary equipment
- You're not in the correct environment
- You doubt your abilities

Under any of these conditions, contact your service representative to purchase or replace the component(s).

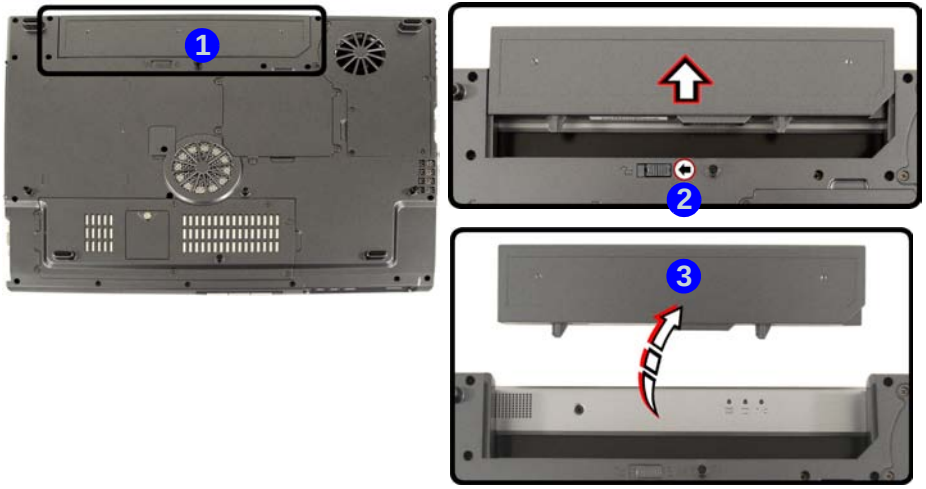
Removal Warning

When removing any cover(s) and screw(s) for the purposes of device upgrade, remember to replace the cover(s) and screw(s) before turning the computer on.

Removing the Battery

If you are confident in undertaking upgrade procedures yourself, for safety reasons it is best to remove the battery.

1. Turn the computer **off**, and turn it over.
2. Locate the battery bay at point 1.
3. Slide the battery lock 2 in the direction of the arrow (towards the unlock symbol), and hold it in place.
4. Slide the battery 3 out of the computer's battery bay.



Warranty Warning

Please check with your service representative before undertaking any upgrade procedures to find out if this will VOID your warranty.

Figure 6 - 1
Battery Removal

HDD System Warning

New HDD's are blank. Before you begin make sure:
You have backed up any data you want to keep from your old HDD.
You have all the CD-ROMs and FDDs required to install your operating system and programs.
If you have access to the internet, download the latest application and hardware driver updates for the operating system you plan to install. Copy these to a removable medium.

Upgrading the Hard Disk Drive

The hard disk drive can be taken out to accommodate other 2.5" parallel (PATA) hard disk drives with a height of 9.5mm (h) (see *"Storage" on page A - 3*). Follow your operating system's installation instructions, and install all necessary drivers and utilities (as outlined in *"Installation Procedure" on page 4 - 6*), when setting up a new hard disk.

1. Turn **off** the computer, and turn it over and remove the battery.
2. Locate the hard disk bay cover and remove screws 1 - 7.
3. Remove the bay cover 8.

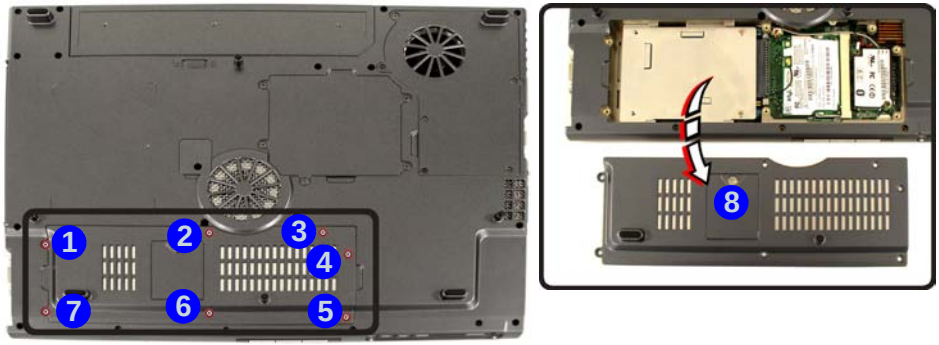


Figure 6 - 2
Hard Disk Cover Removal

4. Slide the hard disk assembly in the direction of the arrow 9.
5. Carefully lift the hard disk assembly 10 up out off the computer.
6. Remove screws 11 - 14 and separate the cover from the hard disk 15.
7. Reverse the process to install a new hard disk (pay careful attention to the orientation of the disk under the cover).

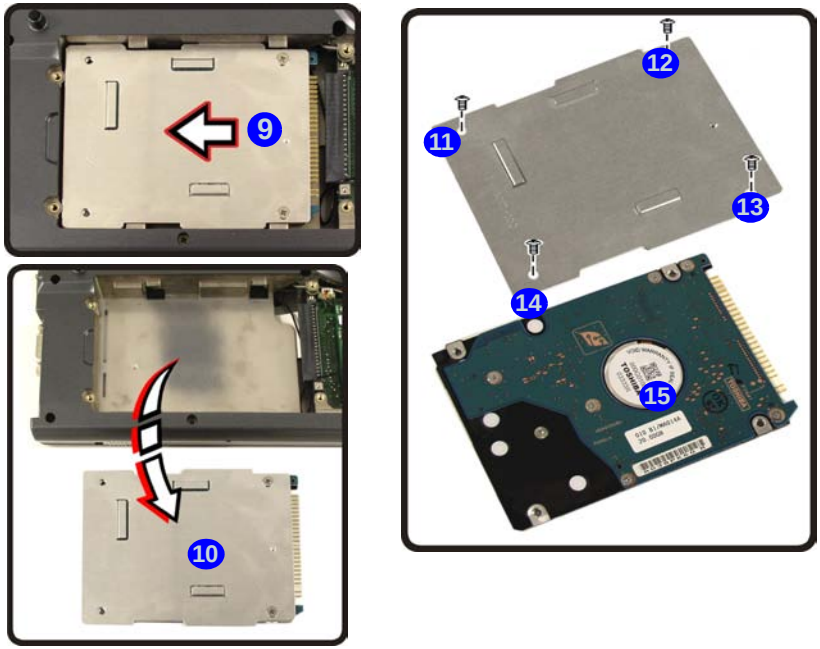


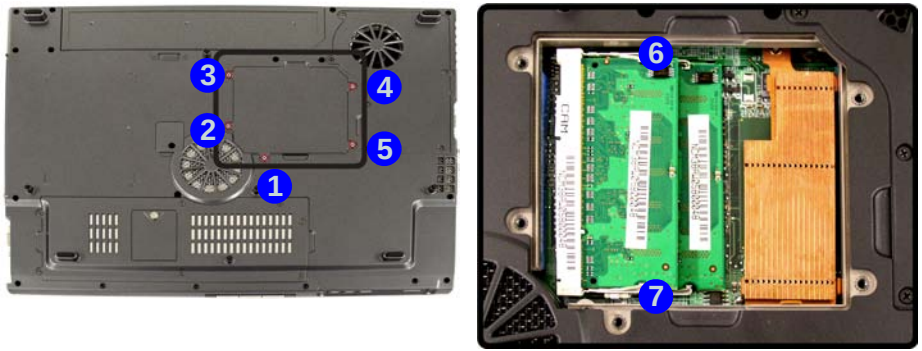
Figure 6 - 3
Hard Disk Assembly Removal

Upgrading the System Memory (RAM)

The computer has two memory sockets for 200 pin Small Outline Dual In-line (SO-DIMM) - DDRII (**DDR2**) 400/533 MHz - type memory modules (see *"Memory" on page A - 2* for details). The total memory size is automatically detected by the POST routine once you turn on your computer.

1. Turn **off** the computer, and turn it over and remove the battery.
2. Locate the memory (RAM) bay cover, remove screws 1 - 5, and remove the bay cover.
3. Gently pull the two release latches (6 & 7) on the sides of the memory socket in the direction indicated by the arrows in *Figure 6 - 4*.

Figure 6 - 4
RAM Cover Removal & Release Latches



4. The RAM module 8 (see ***Figure 6 - 5***) will pop-up, and you can remove it.

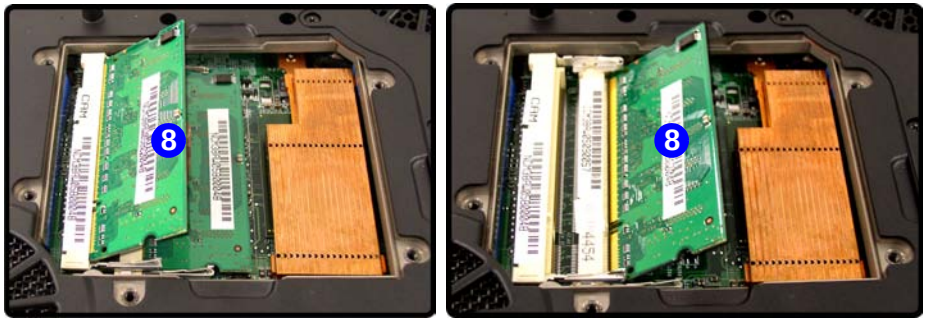


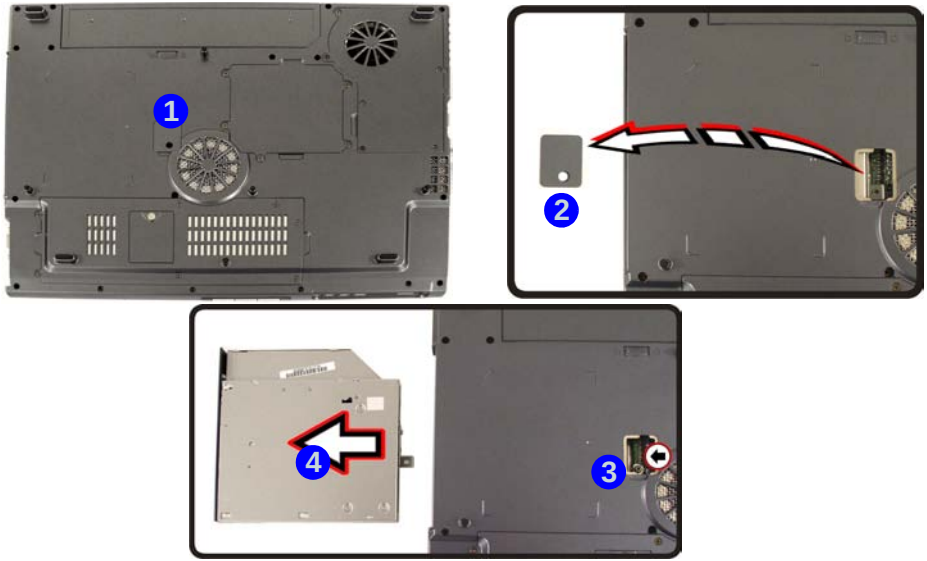
Figure 6 - 5
RAM Modules Released

5. Pull the latches to release the second module if necessary.
6. Insert a new module holding it at about a 30° angle and fit the connectors firmly into the memory slot.
7. The module's pin alignment will allow it to only fit one way. Make sure the module is seated as far into the slot as it will go. DO NOT FORCE the module; it should fit without much pressure.
8. Press the module in and down towards the mainboard until the slot levers click into place to secure the module.
9. Replace the memory socket cover and the **5** screws (see ***Figure 6 - 4***).
10. Restart the computer to allow the BIOS will register the new memory configuration as it starts up.

Upgrading the Optical (CD/DVD) Device

1. Turn **off** the computer, and turn it over and remove the battery.
2. Remove the screw at point 1.
3. Remove CD/DVD device screw cover 2.
4. Apply pressure at point 3 to push the CD/DVD Device 4 out of the computer.
5. Reverse the process to install the new device.

Figure 6 - 6
CD/DVD Device Removal Procedure



Upgrading the Processor

If you want to upgrade your computer by replacing the existing processor with a faster/new one you will need to contact your customer service representative. We recommend that you do not do this yourself, since if it is done incorrectly you may damage the processor or mainboard.

Warranty

The CPU is not a user serviceable part. Opening this compartment, or accessing the CPU in any way, may violate your warranty.

Unauthorized tampering with the HDD may also violate your warranty.

Chapter 7: Wireless & PC Camera Modules

Overview

This chapter contains the information on the **optional** Wireless LAN, **optional** Bluetooth and **optional** PC Camera modules which may come with your computer, depending on the configuration purchased. If you are unsure please contact your service representative.

The chapter includes information on the following:

- Intel PRO/Wireless **2200BG (802.11b/g) OR 2195ABG (802.11a/b/g)** Mini PCI WLAN Module (optional feature)
- The Bluetooth Module (optional feature)
- The PC Camera (optional feature)

Wireless Device Operation Aboard Aircraft

The use of any portable electronic transmission devices aboard aircraft is usually prohibited. Make sure the module(s) are **OFF** if you are using the computer aboard aircraft. Check the taskbar icons, and the WLAN LED status indicator for the power status of the WLAN/Bluetooth module(s).

Table 7 - 1
WLAN/Bluetooth Toggle Power Order

WLAN/Bluetooth Toggle Power Order

If you have **either** a WLAN **OR** Bluetooth module, press the Ap-Key Button to power ON/OFF the **single** module.

If you have **both** WLAN **AND** Bluetooth modules, press the Ap-Key Button to toggle through the range of power options for **both** modules. If both modules are OFF, then the following is the order the power is toggled to the modules.

Press	Taskbar Icon(s)	Function
Press Once		WLAN module only ON
Press Twice		Bluetooth module only ON
Press Three Times		Both WLAN & Bluetooth modules ON
Press Four Times		Both WLAN & Bluetooth modules OFF

If you **restart/turn off** the computer, the power status of the module(s) will remain **the same** as it was before the restart/shut down.

Intel PRO/Wireless Mini PCI WLAN Module

Either an **Intel PRO/Wireless 2200BG (802.11b/g)** or **2915ABG (802.11a/b/g)** Mini-PCI WLAN module is supplied as a **optional** feature for the computer, depending on your purchase configuration. You will be provided with the appropriate software CD for your module.

Before installing the **Intel PRO/Wireless 2200BG** or **2915ABG** Mini-PCI WLAN driver, make sure that the Wireless LAN module is on (the LED will be green). Use the Ap-Key Button (see *"Ap-Key Buttons" on page 2 - 13*) to toggle power to the Wireless LAN module (**make sure you install the drivers in the order indicated in** *Table 4 - 1, on page 4 - 6*).

To get help you can view the **User Guide** from the ***Intel PRO CD-ROM***.

Wireless Device Operation Aboard Aircraft

The use of any portable electronic transmission devices aboard aircraft is usually prohibited. Make sure the module(s) are **OFF** if you are using the computer aboard aircraft.

Use the AP-Key button to toggle power to the WLAN module, and check the status indicator to see if the module is powered on or not (see *Table 7 - 1, on page 7 - 2*).

Figure 7 - 1
Installation Screens

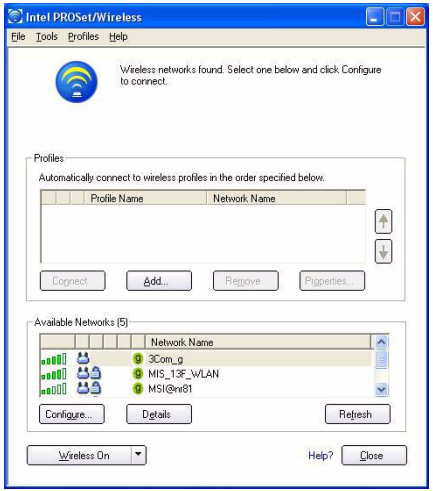
User Guide

You can view the User Guides by inserting the ***Intel PROSet/ Wireless CD-ROM*** and clicking **View User Guides** (button) as per ***"Installation Screens" on page 7 - 3***.

Figure 7 - 2
Intel PROSet/ Wireless

Intel WLAN Driver Installation

1. Make sure the module is powered on, then insert the ***Intel PROSet/ Wireless CD-ROM*** into the CD/DVD drive.
2. Click **Install Software** (button).
3. Click the button to accept the license and click **Next > Next > OK.**
4. Click **OK** to complete the installation.
5. You can configure the settings by going to the **Intel (R) PROSet Wireless** control panel (**Start** > **Programs/All Programs** > **Intel PROSet Wireless**), or by clicking the taskbar icon .



Bluetooth Module

Before installing the Bluetooth driver, make sure that the **optional** Bluetooth module is on. Use the Ap-Key Button (see *"Ap-Key Buttons" on page 2 - 13*) to toggle power to the Bluetooth module. **Make sure you install the drivers in the order indicated in** *Table 4 - 1, on page 4 - 6*.

Bluetooth Driver Installation

1. Make sure the module is powered on, then insert the ***Bluetooth CD-ROM*** into the CD/DVD drive.
2. The program will run automatically.
3. Choose the language you prefer, and click **OK**.
4. Click **Next > Yes > Next**.
5. Click **Finish** to restart the computer.
6. Click **OK** when the **Welcome to Bluetooth** screen appears on restart.
7. You can configure the settings by going to the **IVT Corporation BlueSoleil - Main Window** control panel (**Start** > **Programs/All Programs** > **IVT BlueSoleil**), or by clicking the taskbar icon .

View the BlueSoleil User Guides from the **Help** Menu (or press the **F1** key) in the **IVT Corporation BlueSoleil - Main Window** control panel. Click **BlueSoleil User Guides** in the **Contents** tab, and click to select the appropriate User Guide from the panel on the right (see *Figure 7 - 3 on page 7 - 6*).

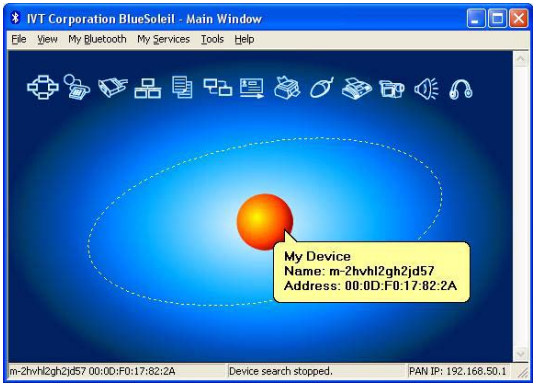
Wireless Device Operation Aboard Aircraft

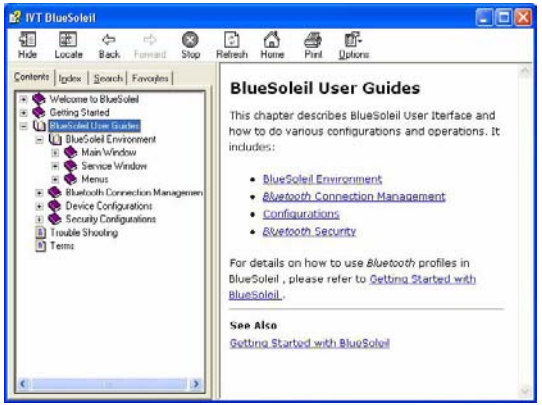
The use of any portable electronic transmission devices aboard aircraft is usually prohibited. Make sure the module(s) are **OFF** if you are using the computer aboard aircraft.

Use the AP-Key button to toggle power to the Bluetooth module, and check the taskbar icon to see if the module is powered on or not (see *Table 7 - 1, on page 7 - 2*).

7

Figure 7 - 3
Bluetooth Control Panel & User Guides





PC Camera

Before installing the PC Camera driver, make sure that the **optional** PC Camera module is on. **Use the Fn + F8 key combination** (see *"Function Keys and Numeric Keypad" on page 2 - 14*) to toggle power to the PC Camera module (**make sure you install the drivers in the order indicated in** *Table 4 - 1, on page 4 - 6*).

Latest PC Camera Driver Information

Check the **PC Camera CD**, and any accompanying insert pages, for the latest updated information on the PC Camera driver, which may override the information provided here.

PC Camera Driver Installation

1. Make sure the module is powered on, then insert the **PC Camera CD-ROM** into the CD/DVD drive.
2. The program will run automatically.
3. Click **Next**.
4. Click **Finish** to restart the computer.
5. After restart the computer will find the new hardware for you.
6. Run the **AMCAP** program from the **CMM PC Camera** item in the **Start > Programs/All Programs** menu.

Taking Still Pictures

Double-click the **My Computer** icon on the desktop, or go the **Start** menu and point to **My Computer**, then click it.

Double-click the **CMM PC Camera** icon.

Click **Take a new picture** in the **Camera Tasks** box.

PC Camera Audio Setup

If you wish to capture video & **audio** with your camera, it is necessary to setup the audio recording options in *Windows*.

1. Go to the **Start** menu and point to **Settings** (or just click **Control Panel**) and click **Control Panel**, then double-click the **Sounds & Audio Devices** icon (**Speech, and Audio Devices** in **Category View**).
2. Click **Advanced** (button) in the **Device volume** tab.
3. Click **Options** (Volume Control) and scroll down and click **Properties**.
4. Select **Realtek HD Audio input** from the **Mixer device** dropbox.
5. Click **Mic Volume** (check box), if not already clicked, and click **OK**.
6. Make sure the **Select** (check box) in the **Recording Control** panel, under the **Mic Volume** section, is checked (boost the volume as high as it will go).
7. Close the window, then click **OK**.

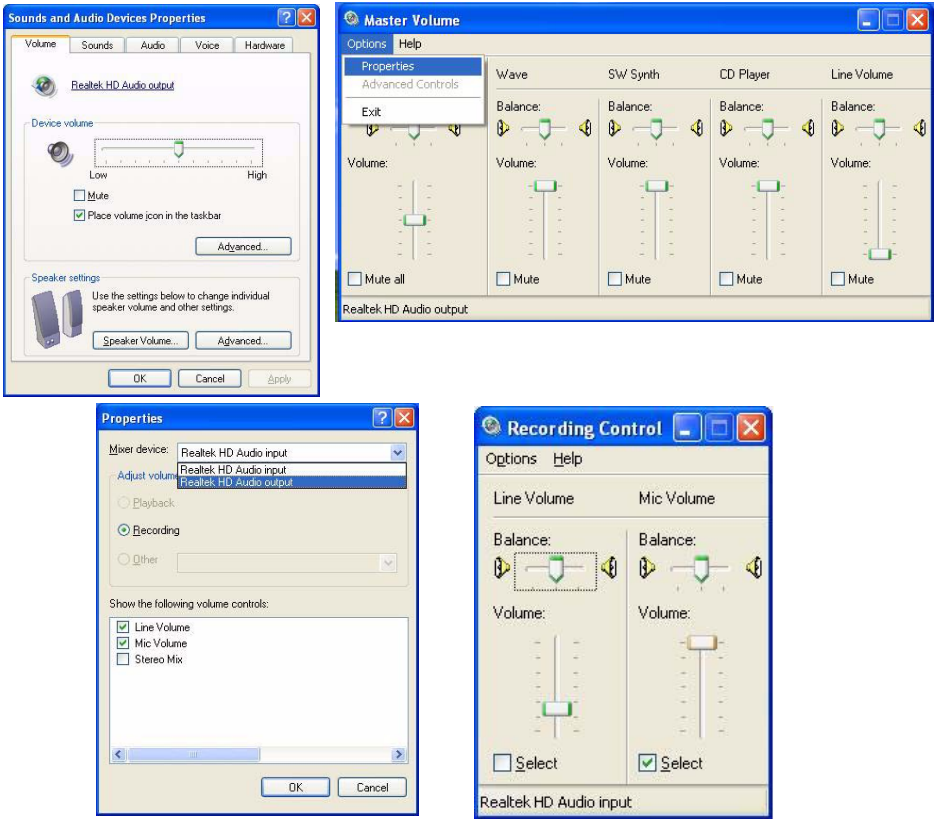


Figure 7 - 4
Audio Setup

Pre-Allocating File Space

You may pre-allocate the file size for the capture file in the AMCAP program. You can choose to ignore this by clicking **Cancel**.

Pre-allocating space on the hard disk can improve the capture quality (particularly of large capture files), by reducing the amount of work the hard disk has to do in finding space for the video data as it is being captured.

You may find it helpful to defragment the HDD before capture.

AMCAP

AMCAP is a video viewer useful for general purpose video viewing and testing, and can capture video files to .avi format.

1. Run the **AMCAP** program from the **Start > Programs/All Programs > CMM PC Camera** menu (it is recommended that you **set the capture file** before the capture process - **see Set Capture File below**).
2. Go to the **Capture** menu heading (if you wish to capture audio make sure that the **Capture Audio** option is ticked) and select **Start Capture**.
3. On the first run of the program (if you have not set the captured file) you will be asked to choose a file name and size (**see the sidebar - Pre-Allocating File Space**) for the captured file.
4. Click **OK** to start capturing the video, and press **Esc** to stop the capture.
5. If you wish to, you may go to the **File** menu and select **Save Captured Video As...**, choose a file name and location, then click **Open** (you can view the file using the **Windows Media Player**).

Set Capture File

You will only be asked to set the capture file name on the first run of the **AMCAP** program. When you run the program the next time the file will automatically be overwritten with the newly captured file. To avoid overwriting files you can go to the **Set Capture File..** option in the **File** menu, and set the file name and location before capture. Set the name and location then click **Open** (you can choose **Cancel** to ignore the file size if prompted).

Eliminating Screen Flicker

If you find that the video screen in the AMCAP program is flickering, you can try to adjust the option from the **Video Capture Filter** options.

1. Run the **AMCAP** program from the **Start > Programs/All Programs > CMM PC Camera** menu.
2. Go to **Options** and scroll down to select "**Video Capture Filter...**".
3. You can choose either **50Hz** or **60Hz** from the **No Flicker** box.

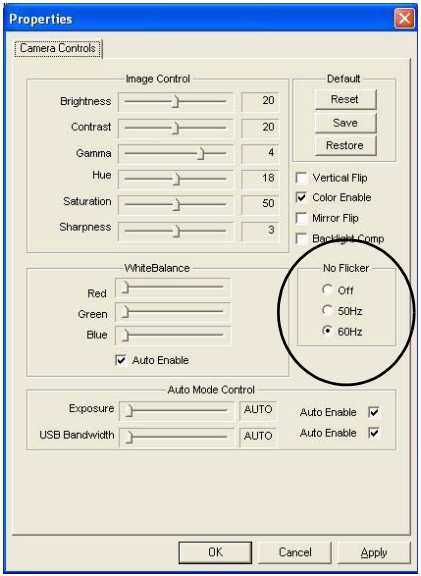


Figure 7 - 5
Camera Controls

Chapter 8: Troubleshooting

Overview

Should you have any problems with your computer, before consulting your service representative, you may want to try to solve the problem yourself. This chapter lists some common problems and their possible solutions. This can't anticipate every problem, but you should check here before you panic. If you don't find the answer in these pages, make sure you have followed the instructions carefully and observed the safety precautions in the preface. If all else fails, talk to your service representative. You should also make a record of what happened and what remedies you tried.

Of course, if something goes wrong, it will happen at the most inconvenient time possible, so you should preview this section just in case. If, after you've tried everything, and the system still won't cooperate, try turning it off for a few minutes and then rebooting. You will lose any unsaved data, but it may start working again. Then call your service representative.

Basic Hints and Tips

Many of the following may seem obvious but they are often the solution to a problem when your computer appears not to be working.

- **Power** - Is the computer actually plugged into a working electrical outlet? If plugged into a **power strip**, make sure it is actually working. Check the **LED Power & Communication Indicators** (see ***"LED Power & Communication Indicators" on page 2 - 3***) to see the computer's power status.
- **Connections** - Check all the **cables** to make sure that there are no **loose connections** anywhere.
- **Power Savings** - Make sure that the system is not in **Hibernate** or **Standby** mode by pressing the keys configured in your *Power Options* (see ***"Configuring the Power Button" on page 3 - 20***), the **Fn + Esc** key combination, or power button to wake-up the system.
- **Brightness** - Check the brightness of the screen by pressing the **Fn** + **F9 and F10** keys to adjust the brightness (see ***"Advanced Video Controls" on page 3 - 2***).
- **Display Choice** - Press **Fn** + **F6** to make sure the system is not set to "external only" display (see ***"Function Key Combination" on page 3 - 9***).
- **Boot Drive** - Make sure there are no **floppy disks** in the drive (if you have one connected) when you start up your machine (this is a common cause of the message "***Invalid system disk - Replace the disk, and then press any key***" / "***Remove disks or other media. Press any key to restart***").

Backup and General Maintenance

- Always **backup** your important data, and keep copies of your OS and programs safe, but close to hand. Don't forget to note the **serial numbers** if you are storing them out of their original cases, e.g. in a CD wallet.

- Run **maintenance programs** on your hard disk and OS as often as you can. You may schedule these programs to run at times when you are not using your computer. You can use those that are provided free with your OS, or buy the more powerful dedicated programs to do so.

- Write down your passwords and keep them safe (away from your computer). This is especially important if you choose to use a **Startup** password for the SCU (see *"Security Menu" on page 5 - 10*).

- Keep copies of vital **settings files** such as network, dialup settings, mail settings etc. (even if just brief notes).

Warranty

The CPU is not a user serviceable part. Opening this compartment, or accessing the CPU in any way, may violate your warranty.

Viruses

- Install an **Anti-Virus** program and keep the **definitions file** (the file which tells your program which viruses to look for) up to date. New computer viruses are discovered daily, and some of them may seriously harm your computer and cause you to lose data. **Anti-Virus** programs are commercially available and the **definitions file updates** are usually downloadable directly from the internet.

- Be careful when opening e-mail from sources you don't know. **Viruses** are often triggered from within **e-mail attachments** so take care when opening any attached file. You can configure most **Anti-Virus** programs to check all **e-mail attachments**. **Note**: You should also beware of files from people you know as the virus may have infected an **address book** and been automatically forwarded without the person's knowledge.

- Keep a "**Boot Floppy Disk**" or "**Bootable CD-ROM**" (this disk provides basic information which allows you to startup your computer) handy. You may refer to your OS's documentation for instructions on how to make one, and many **Anti-Virus** programs will also provide such a disk (or at least instructions on how to make one).

Upgrading and Adding New Hardware/Software

- Do not be tempted to make changes to your **Windows Registry** unless you are very sure of what you are doing, otherwise you will risk severely damaging your system.

- Don't open your computer or undertake any repair or upgrade work if you are not comfortable with what you are doing.

- Read the **documentation**. We can assume, since you are reading this that you are looking at the computer's manual, but what about any new peripheral devices you have just purchased? Many problems are caused by the installation of new hardware and/or software. Always refer to the documentation of any new hardware and/or software, and pay particular attention to files entitled "**READ ME**" or "**READ ME FIRST**".

- When installing a new device always make sure the device is powered on, and in many cases you will need to restart the computer. Always check that all the cables are correctly connected.

- Make sure you have installed the **drivers** for any new hardware you have installed (latest **driver files** are usually available to download from vendor's websites).

- Thoroughly check any **recent changes** you made to your system as these changes may affect one or more system components, or software programs. If possible, go back and undo the change you just made and see if the problem still occurs.

- Don’t over complicate things. The less you have to deal with then the easier the source of the problem may be found; **Example** - if your computer has many devices plugged into its ports, and a number of programs running, then it will be difficult to determine the cause of a problem. Try disconnecting all of the devices and restarting the computer with all the peripheral devices unplugged. A process of elimination (adding and removing devices and restarting where necessary) will often find the source of a problem, although this may be time consuming.

Problems & Possible Solutions

Power

Problem	Possible Cause - Solution
You turned on the power but it doesn't work.	*Battery missing / incorrectly installed.* Check the battery bay, make sure the battery is present and seated properly (the design of the battery only allows it to go in one way). Make sure there's nothing interfering with the battery contacts.
The Battery **LED power** indicator  , is blinking orange.	*Low Battery.* Plug in the AC power source. If the computer doesn't start up immediately, turn it off then on again.
You are losing battery power too quickly.	*The system is using too much power.* If your *OS* has a *Power Options* scheme (see ***"Power Schemes" on page 3 - 16***) check its settings. You may also be using a PC Card device that is drawing a lot of power.
Actual battery operating time is shorter than expected.	*The battery has not been fully discharged before being recharged.* Make sure the battery is fully discharged and recharge it completely before reusing (see ***"Battery Information" on page 3 - 21***). *Power Options have been disabled.* Go to the **Control Panel** in *Windows* and re-enable the options. *A peripheral device or PC Card is consuming a lot of power.* Turn off the unused device to save power.

Problem	Possible Cause - Solution
The computer feels too hot.	Make sure the computer is properly ventilated and the vents/fan intakes are not blocked. If this doesn't cool it down, put the system into **Hibernate** mode or turn it off for an hour. Make sure the computer isn't sitting on a thermal surface (see ***"Overheating" on page 1 - 19***). Make sure you're using the correct adapter. Make sure that your notebook is completely powered off before putting it into a travel bag (or any such container). Putting a notebook which is powered on in a travel bag may cause the vents/intakes to be blocked.

Display

Problem	Possible Cause - Solution
Nothing appears on screen.	*The system is in a power saving mode*. Toggle the sleep/resume key combination, **Fn + Esc** (see ***"Function Keys and Numeric Keypad" on page 2 - 14***). *The screen controls need to be adjusted.* Toggle the screen control key combinations **Fn + F9/F10** (see ***"Advanced Video Controls" on page 3 - 2***). If you're connected to an external monitor, make sure it's plugged in and turned on. You should also check the monitor's own brightness and contrast controls. *The computer is set for a different display.* Toggle the screen display key combination, **Fn + F6** (see ***"Function Key Combination" on page 3 - 9***). If an external monitor is connected, turn it on. *The **screen saver** is activated.* Press any key or touch the **TouchPad**.

Problem	Possible Cause - Solution
No image appears on the external monitor I have plugged in and powered on.	*You haven't installed the video driver and configured it appropriately from the* ***Control Panel****.* See ***"Video (WinXP)" on page 4 - 8*** for instructions on installing the driver, and see ***"NVIDIA Display Properties" on page 3 - 3*** for instructions on configuring the video driver.

Boot Password

Problem	Possible Cause - Solution
You forget the boot password.	*If you forget the password, you may have to discharge the battery of the CMOS.* Contact your service representative for help.

Password Warning

If you choose to set a boot password, **NEVER** forget your password. The consequences of this could be serious. If you cannot remember your boot password you must contact your vendor and you may lose all of the information on your hard disk.

Audio & CD Device

Problem	Possible Cause - Solution
The sound cannot be heard or the volume is very low.	*The volume might be set too low.* Check the volume control in the ***Volume Control Panel*** in the *Windows* taskbar, or use the key combination **Fn + F11** and **F12** (see ***"Function Keys and Numeric Keypad" on page 2 - 14***) to adjust.
The compact disc cannot be read.	*The compact disc is dirty.* Clean it with a CD-ROM cleaner kit.
The compact disc tray will not open when there is a disc in the tray.	*The compact disc is not correctly placed in the tray.* Gently try to remove the disc using the eject hole (see ***"Loading Discs" on page 2 - 7***).
The DVD regional codes can no longer be changed.	*The code has been changed the maximum **5** times.* See ***"DVD Regional Codes" on page 2 - 9***.

Media Warning

When manually ejecting a CD/DVD, DO NOT use a sharpened pencil or similar object which may break, and become lodged in the hole.

Keyboard

Problem	Possible Cause - Solution
Unwelcome numbers appear when typing.	*If the LED* 🔒 *is lit, then Num Lock is turned* ***ON****.* Check that Padlock mode is not enabled (see ***"Numeric Keypad" on page 2 - 15***).

Other Keyboards

If your keyboard is damaged or you just want to make a change, you can use any standard USB keyboard. The system will detect and enable it automatically. However special functions/hot keys unique to the system's regular keyboard may not work.

Operation

Problem	Possible Cause - Solution
The system freezes or the screen goes dark.	*The system's power saving features have timed-out*. Use the AC adapter, press the sleep (**Fn + Esc**) key combination, or press the power button if no LEDs are lit.
The system never goes into a power saving mode.	*Power Options features are not enabled*. Go to the Windows Power Options menu and enable the features you prefer (see ***"Power Options" on page 3 - 14***). Make sure you have enabled **Hibernate** mode from the control panel.

Modules

Problem	Possible Cause - Solution
The Wireless LAN/ Bluetooth module(s) cannot be detected.	*The module(s) are off.* Check the LED indicator to see if the WLAN module is ON/OFF (see ***"LED Status Indicators" on page 2 - 2***). Check the ***"WLAN/Bluetooth Toggle Power Order" on page 7 - 2*** for the power status of both the WLAN and Bluetooth modules. If the indicator(s) is/are off, then press the Ap-Key button in order to power ON/OFF the modules.
The Wireless LAN/ Bluetooth module(s) cannot be configured.	The driver(s) for the module(s) have not been installed. Make sure you have installed the driver for the appropriate module (see ***"Intel WLAN Driver Installation" on page 7 - 4*** and/or ***"Bluetooth Driver Installation" on page 7 - 5***).
The PC Camera module(s) cannot be detected.	*The module is off.* Press the **Fn** + **F8** key combination to power ON/OFF the module.
The PC Camera module(s) cannot be configured.	*The driver for the module has not been installed*. Make sure you have installed the driver for the PC Camera module (see ***"PC Camera Driver Installation" on page 7 - 7***).

Appendix A: Specifications

Latest Specification Information

The specifications listed in this Appendix are correct at the time of going to press. Certain items (particularly processor types/speeds) may be changed or updated due to the manufacturer's release schedule. Check with your service center for details.

Feature	Specification	
Processor Types	Intel® Pentium® M Processor (478-pin) Micro-FCPGA Package **730/ 740/ 750/ 760/ 770/ 780**	(μ0.09) 0.09 Micron Process Technology, 2MB On-Die L2 Cache & 533MHz Front Side Bus
	Intel® Pentium® M Processor (478-pin), Micro-FCPGA Package **715/ 725/ 735/ 745/ 755/ 765**	(μ0.09) 0.09 Micron Process Technology, 2MB On-Die L2 Cache & 400MHz Front Side Bus
Core Logic	Intel 915PM + ICH6-M	
LCD	15.4" WXGA (1280*800)/ WSXGA+ (1680*1050)/ WUXGA (1920*1200) TFT LCD (16:10 Wide Screen Aspect Ratio)	
Memory	64-bit DDR Dual Channels Two 200 Pin DDR SODIMM Sockets Supporting **DDRII** (**DDR2**) 400/533 MHz Modules	Supporting 256/ 512/ 1024 MB **DDRII** (**DDR2**) RAM Modules Expandable up to 2GB
Display	NVIDIA GeForce Go 6600 (NV34M) High Performance Chip 128/256MB DDR SGRAM External Video Memory Integrated 128-bit 2D/3D Graphics Engine PCI-E * 16 Interface CineFX3.0 Engine: Microsoft DirectX 9 & Shader Model 3.0 Support Pure Video Technology: High Definition Video/ Super Picture Quality	

Feature	Specification	
Security	Security (Kensington® Type) Lock Slot	BIOS Password
BIOS	One 512KB Flash ROM	Plug and Play (1.0a) Phoenix BIOS
Storage	One Changeable 12.7mm (h) Optical Device (CD-ROM/ DVD-ROM/ Combo/ DVD-Dual/ DVD Super-Multi) One Changeable Primary 2.5" 9.5mm (h) Parallel (PATA) Hard Disk Drive Supporting LBA Mode Supports ATA 33/ 66/ 100	
Audio	Integrated AZALIA Compliant Interface (HDA); Compatible with AC'97 & WHQL Specifications SRS **WOW** Surround Sound Technology inside (SRS/ TruSurround/ TruBass / Focus Enhancement) 24-bit Stereo Full-Duplex CODEC	EAX™ 1.0 & 2.0/ DirectSound 3D™/ A3D™ Compatible 7.1 Channel Audio Analog Output S/PDIF Digital Output 4 Built-In 1.5W Speakers Built-In Microphone
Keyboard, Pointing Device & Buttons	Full Size Winkey Keyboard	Built-In TouchPad (Scroll Functionality Included)
PCMCIA	One Type II PCMCIA 3.3V/5V Socket	
Card Reader	One 4-in-1 Built-In Card Reader (SD/ MS/ MS Pro/ MMC)	

Feature	Specification	
Interface & Communication	Three USB 2.0/1.1 Ports One Mini IEEE1394a Port One External Monitor Port One S-Video-Out Port for TV Output One Serial Port One Headphone-Out /Speaker-Out Jack One Microphone-In Jack One S/PDIF Out Jack One DC-In Jack 300K Pixel CMOS VIdeo Camera Module (**Factory Option**) Bluetooth 1.2 Module - (WPN) Wireless Personal Network (**Option**)	One RJ-45 Jack (Local Area Network) 10M/100M/1G PCI-ExpressFast Gigabit Ethernet On Board One Infrared Transceiver IrDA 1.1 Compliant (IrDA 1.1/ FIR/ SIR/ ASKIR) Infrared Transfer 1cm ~ 1M Operating Distance 115.2K bps SIR 4M bps FIR One RJ-11 Jack (Modem) AZALIA 56K Plug & Play Fax/ Modem V.90/92 Compliant **Wireless Network Options** Intel PRO/Wireless 2200BG (802.11b/g) (**Option**) **OR** Intel PRO/Wireless 2915ABG (802.11a/b/g) (**Option**)
Power Management	Supports ACPI 2.0 Supports Hibernate/Standby Modes Supports Battery Low Sleep	Supports Resume from Alarm Supports Resume from Modem Ring Supports Resume from LAN

Feature	Specification
Power	Universal AC Adapter - AC-In 100~240V, 50~60Hz, DC Output 20V 4.5A (90W) Easy Changeable Main Battery Smart Lithium-Ion, 4400mAh (6 cells) Easy Changeable **Optional** Second Battery Smart Lithium-Ion, 8800mAh (12 cells)
Environmental Spec	**Temperature** Operating: 5°C ~ 35°C Non-Operating: -20°C ~ 60°C **Relative Humidity** Operating: 20% ~ 80% Non-Operating: 10% ~ 90%
Physical Dimensions & Weight	360mm (w) * 273mm (d) * 29.5mm (h) 3.20Kg (with 6 cell battery)
Optional	CD-ROM Drive Module DVD/CD-RW Combo Drive Module DVD-ROM Drive Module DVD-Dual Drive Module DVD Super-Multi Drive Module Software DVD Player USB VIdeo Camera Module (**Factory Option**) **Wireless Network Options** Intel PRO/Wireless 2200BG (802.11b/g) (**Option**) **OR** Intel PRO/Wireless 2915ABG (802.11a/b/g) (**Option**) Bluetooth 1.2 Module (**Factory Option**)

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